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The Practical Farmer

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A Farmer's Views on Maintaining Soil Fertility

By R. B. RUSHING

IT is a fact to be regretted that the country today is dotted with farms which are robbed of their fertility and almost ruined. They have at last reached the state at which they are abandoned, many fields being washed into gullies. Others are cropped as long as they will produce anything, and then left to grow up in scrubby bushes of all kinds which are practically worthless. While I always dislike to look at the dreary side of anything, and especially farming, I dare not withhold the truth. These are stubborn facts, but we must face them, nevertheless. To go over the country and see the way in which many farms have been conducted, it seems that the idea with many men has been to take all they can from the soil without paying anything back at all.

Of course, it is also a fact that when this land of ours was first put under cultivation by our fathers, years ago, the need of putting fertility back into the soil was not so great as it is at the present day. Then the land could be cleared and broken and would produce good crops, but now this same land has to be handed down to the children and grandchildren in a run-down state. As the years rolled on, the need of putting back fertility became apparent. But why was this not done? There are, I think, two prevailing reasons why it has not been done:

First, until of late years there was only a small percentage of farmers who knew much about the soil, except that good soil would produce good crops under favorable conditions.

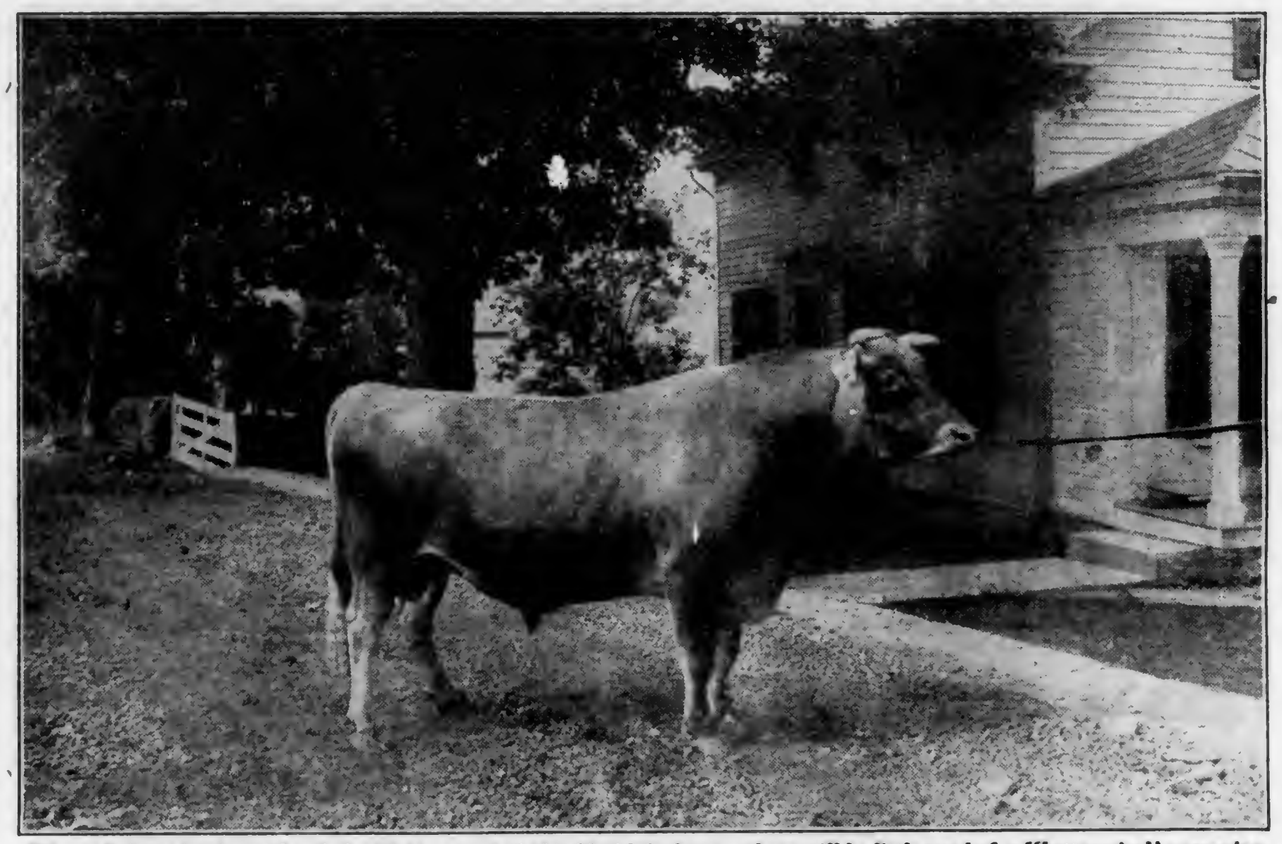
Second, while there were some men who did perhaps know something about the soil, they did not own the land they were cultivating; they were not interested in maintaining the fertility enough to make any effort toward turning anything back. In fact, they could hardly be blamed for this, as they did not expect to remain long on the same land, and therefore they thought they should get all out of the land they could before they left for another farm. And, still, I have known men who did understand many things about the soil, and who owned farms, but were actually too stingy and loved to see the immediate dollar too well to put any in the soil for future use. This has not only been the practice in the past, but I know of many today who are following this same plan. Talk to such men about soil fertility, and they will say they know as much about raising things as anybody.

Of course, there is a bright side to all questions, if we can only see it, and I, for one, think it also a fact to be proud of that there are today many farmers who are giving this question of improving their soil their earnest attention. While driving over the country, when we see a run-down farm, the next farm that comes into view perhaps is one that is up to date, and it always brightens the eyes to see such things. In fact, I think the time is drawing near when we will have more fertile farms, and when that time does come there will not be so much complaint about hard times, and our young people will not be hunting for other fields of labor. I think it is quite discouraging for the boy or girl to be raised on a farm being run in such a manner that they hardly have respectable clothing. Yet this is actually done in many places. And I do not blame the boys or girl for hunting a place where they can make money for themselves.

Now, says the reader, if what you have said is true, how am I to bring up my soil and at the same time raise such things as will provide food and clothing for my family? This is a fair question and one well worthy of our consideration.

I, for one, must admit that this is a serious proposition now facing many a man. Being in possession of a farm that is hardly producing enough to supply food and clothing at the present time, and then think of putting part or all of this back to build up the soil and perhaps also to retire a heavy mortgage, is quite serious to think about.

Yet if we are to have permanent agriculture, this must be done in some way. Of course, different farms will require different treatment. But one of the first things I think should be done is to endeavor to keep all the live stock possible. By feeding as near all the products as is consistent, and turning the manure over to the soil at the proper time, we are not selling as much of the valuable fertility. We should also rotate crops so as to suit the natural trend of the soil. And here is something that almost each individual farmer must study for himself, as rotation that will suit one soil will do little or no good on a different kind or condition of soil. When soils are badly deficient in the valuable plant food elements, they must have legumes turned under and manure applied freely.



When all dairy herds are headed with the equal of this Meridale Jersey, there will be little need of a "better-sire" campaign

Many soils are in very bad physical condition, and soils in such a condition cannot produce good-paying crops, and should be handled in such a way as to supply plenty of humus. This also can be done by applying manure freely and turning under green growths.

There could be a great, big sermon preached on this one subject and then not begin to exhaust it, but that is unnecessary. I know from experience that often a long sermon is worrying, while only a few words often put men to thinking and moving about.

Get all the literature on agriculture that is available, and such includes the good, up-to-the-minute farm papers, and make this matter your earnest study, realizing that it is the finest thing on earth to be a good farmer. Put what you learn into practice, and try to improve upon it. *Illinois.*

9062

Less Work More Milk

Two pounds of milk may seem a small amount, but to increase the milk yield two pounds per cow daily, means a large increase in the profit from any herd.

If you have thirty cows, two pounds more per cow daily would be sixty pounds, worth about $2.00. During the winter season this would total $350 or more.

Truly, this is an extra profit well worth seeking, especially since there is no expense connected with it, aside from the small initial investment in drinking cups.

Water costs practically nothing and to be able to turn water into milk with no effort further than to keep the water supply tank filled, is about as easy a way of making money as one could ask.

"According to our milk records", says W. H. Martin, who is herdsman at Arcady Farm, Lake Forest, Illinois, "James drinking cups increased our milk yield 4 lbs. per cow, per day. With our herd of 97 cows, the cups save two hours daily."

Herman Olson, Cambridge, Wisconsin, "Considers James Cups in relation to outside tank as the modern silo is to the old way of feeding dry cornstalks outside on the snow bank."

Walter Bringold, Wanamingo, Minnesota, is another who puts James cups in the same class as the silo for milk making. "If I could have but one, judging from my experience," he says, "I would rather have the drinking cups than the silo, as I believe the drinking cups make more milk."

What James Cups Accomplished in 28 Herds

Twenty-eight dairymen who kept milk records reported the following results from the use of James Drinking Cups:

One had an increase of from 5 to 10 lbs. per cow per day; three an increase averaging 4 lbs.; three had 3 lbs. average increase; six, 2 lbs.; three, 1½ lbs.; one, ¾ lb.; one reported $8.56 average increase per cow per year; one an average increase of $5; one, $10; one a 3% increase; one 8% increase; two, 10% increase; one, 12½%; one, 20%; and one, 33⅓%.

These reports covered a total of 759 cows, averaging an increase of 2.45 lbs. milk per cow per day.

The Saving in Labor

In a recent investigation of 120 herds in which James cups were used, the owners were *unanimous* in stating that the cups saved them time and labor.

Their answers ranged from ½ minute per cow, per day, to 10 minutes per cow, average being 10 hours saved per cow, each year.

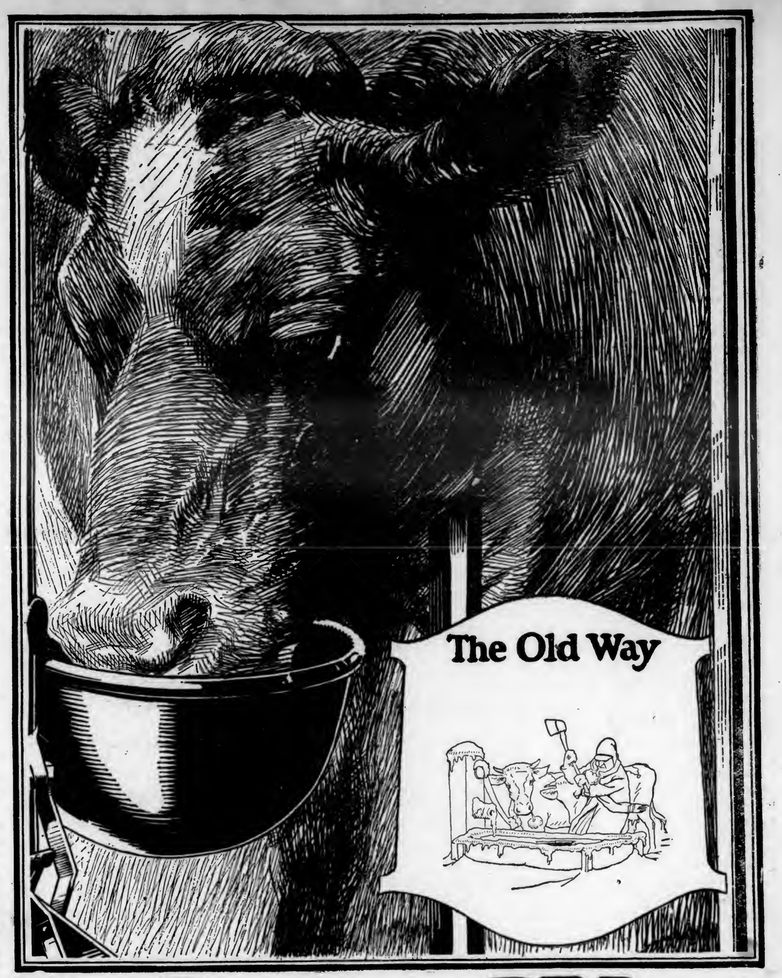
The Calves Grew Faster

Out of 87 dairymen using James cups in their calf pens, 80 say that they have "observed that calves grow better and faster by having a constant supply of water before them."

Help Prevent Spread of Disease

These dairymen were almost unanimous in considering that drinking cups help prevent the spread of disease, each cow drinking from her own cup.

Above are a few of the facts brought to light in this investigation of James drinking cups. The complete results are set forth in Bulletin No. 4, which will be sent on request.



The James Way

Other Work Savers and Milk Makers

Such as the James litter, feed, and milk can carriers and trucks, cow stalls, stanchions, mangers, cow pens, bull and hog pens, ventilators, swill carriers, horse stable fixtures, hog, sheep, and beef barn equipment, are described in the book, "The James-way" which will be sent on request.

Barn Planning

For many years, the James Barn Planning Department has been helping customers and others in planning new barns and remodeling old barns. In this work, Mr. James has associated with him a competent architect and engineer of unusual experience in ventilation and construction problems, another architect who has many years of experience in the planning of new buildings and remodeling of dairy barns, a large number of experienced draftsmen—and in the field are some 60 experts whose work takes them daily into dairy barns in every part of the country, consulting on remodeling and other barn problems, drawing preliminary plans and reporting on new ideas and unusual conditions.

All this experience and ability in the planning of new or remodeling of old dairy barns, is at your service.

Full information regarding the James barn planning service and all James equipment is given in the

Free Barn Book

of 336 pages entitled "The James Way" which will be sent on request. Please state number of cows you own.

If interested in hog barn equipment ask for the "Hog Barn Book".

You want more milk from your cows—you want less work—write for it today.

James Manufacturing Company

Ft. Atkinson Wis. Elmira N.Y. Minneapolis, Minn.
Makers of Labor-Saving Barn Equipment

Looking Over Another "International"

W. H. TOMHAVE

THE twentieth annual International Live Stock Exposition, held in Chicago, November 29th to December 6th, was the largest and most successful that has ever been held. This annual event has become recognized as the clearing house or the place where the final ratings are made each year of all the live stock exhibited at various state and district fairs. Entries in practically every department were larger than any previous show, and came from nearly every state in the Union and Canada. The attendance was larger than any previous year, which indicates the general interest in live stock. Large delegations came from states in the East, South and the far West. Arrangements had been made for a number of special trains from the states near Chicago, but these were canceled on account of the coal strike. Even the canceling of these trains did not materially affect the attendance.

A new feature was added to the show this year. The Chicago board of trade offered $10,000 in premiums for an exhibit of grain and forage crops. This new premium money brought forth grain exhibits from all sections of the country, and made it possible to put up a splendid exhibit of grain and cereal crops, which greatly added to the interest and educational value of the exposition.

It no doubt will be continued, and will make the exposition much broader in its scope than if confined entirely to live stock exhibits.

The agricultural colleges of the United States and Canada have taken an active part in making exhibits of live stock, especially fat animals. An additional feature for many years has been the international students' judging contest, which is held on the opening day. A team of five men representing an institution is required to judge three classes of cattle—horses, sheep and swine. This is splendid experience for the men on these various teams, and adds greatly to the interest of the exposition. Eighteen teams from the United States and Canada entered the contest this year. This is the largest number that has ever taken part. The team from the Texas Agricultural College won with a score of 4119 points out of a possible 5000; Nebraska was second with 4103 points; Kansas was third with 4059 points; Iowa was fourth with 4047 points; Purdue University was fifth with 3946 points; Minnesota was sixth with 3909 points; Oklahoma was seventh with 3899 points; Ohio was eighth with 3859 points; Missouri was ninth with 3811 points; North Dakota was tenth with 3767 points; Pennsylvania was eleventh with 3754 points; Manitoba, Canada, was twelfth with 3720 points; Wisconsin was thirteenth with 3677 points; Kentucky was fourteenth with 3643 points; Ontario, Canada, was fifteenth with 3366 points; South Dakota was sixteenth with 3353 points; Arkansas was seventeenth with 3291 points, and McDonald College, Canada, was eighteenth with 3221 points.

The entries of fat cattle, barrows and fat wethers was of a higher standard than previous years. This is true of the number of entries, as well as the quality of the individuals. Practically all breeds were well represented, showing the universal interest in most of the prominent breeds. The fat animal exhibit was made very largely by the agricultural colleges, although the breeders from different sections of the country had a considerable number of entries and ranked well with those from the colleges. The grand champion steer of the show was an eleven-month-old grade Hereford calf exhibited by Marion Armentrout, of Botna, Iowa. The calf weighed 1025 pounds, and was regarded as one of the best calves ever exhibited at Chicago. The senior yearling Angus steer exhibited by the University of California was made reserved grand champion. The grand champion steer was sold the latter part of the week, for $2.63 a pound, to Mosel Brothers, of Nebraska, to be used for a barbecue to be held in Nebraska some time during the winter. This is the highest price ever paid for a grand champion steer at the International, previous high price being $2.50 a pound paid for the grand champion Angus steer in 1918.

The grand champion barrow of the show was a Poland China, and was exhibited by the University of Missouri. This institution also exhibited the grand champion pen of barrows that came from the same breed. This is the first time for several years that the champion individual and the champion pen of barrows came from the Poland China breed.

The show of fat wethers was, without exception, one of the best that has been held for a long time. The more prominent breeds of sheep were all well represented, which is in keeping with the renewed interest in sheep husbandry. The grand champion wether or lamb again went to Jesse Andrews, West Point, Ind., on a pure-bred Shropshire. Mr. Andrews has had the honor of showing the champion wether for several years.

The climax of all previous Internationals was reached in the breeding classes of cattle, sheep and some of the breeds of swine. Never before has there been such a list of entries representing the different breeds that possess the quality and high standard as those on exhibition this year.

It takes top-notchers like this Grand Champion Hereford bull to win at the "International"

The Hereford show was by many pronounced to be the best that has ever been staged in this country. It was virtually a coming together of the more prominent show herds from nearly every section of the country. The Hereford breed was judged by William Smith, of Pembridge, England. His work was of a high order, and met with the approval of exhibitors. The grand championship on Hereford bull was awarded E. E. Mack, Thomasville, Ga., on Bonnie J. The grand champion female was Belle Blanchard 63d, exhibited by Jesse Engle and Sons, of Missouri.

The number of Shorthorns on exhibition was about the same as last year, but the quality of the cattle has never been better. Herds came from a wide range of territory in the United States and Canada. The grand champion bull of this breed was Lespedeza Collynie, exhibited by L. L. Little, of Tennessee. The junior champion came from the herd of Carpenter and Ross, Mansfield, Ohio. The junior champion female was Lavander 47th, exhibited by J. J. Barron, of Manitoba, while the senior and grand champion female was exhibited by Frank Scofield, of Tennessee.

The Aberdeen Angus breed was up to the usual stadard of excellence and high quality. While the number of entries was not as large as Shorthorns and Herefords, the quality was equal to the other

(Concluded on page 19)

Value of Community Interest

M. G. FEINT

WOULD you knowingly buy a farm in a section where neighbors are indifferent to each other's interests and welfare, even if you could get it very cheap? Would you want to locate in a new neighborhood where no one took any interest in the school or where no one goes to church? If by any chance you were so unfortunate as to locate in a neighborhood of seemingly selfish grouches, would you care to stay there long? If you owned land in such a community would you expect that you could sell it for anywhere near what it was worth as compared to similar farms in some other community where community spirit is strong and neighborly qualities are pleasingly manifested in a variety of ways?

Let a resident of a community that has long been asleep, as regards its social duties, tell of the good that a home economics club can do if carefully managed. I don't suppose any of our people were really selfish, but surely they were thoughtless and indifferent to the loneliness and homesickness of many newcomers. And now that they are learning some of the good things that can be brought into the lives of country people, they value our club and are greatly interested not only in the program laid out by it along a wide range of topics, but they are enjoying each other's society and exchanging ideas with each other. All are too busy for regular social calls, but the monthly club meeting offers a chance to see each other and get acquainted. The young people and even the men are greatly interested. Twice a year we have a general picnic meeting, when the families are invited and a neighboring club usually joins with us, and our circle of acquaintances is rapidly growing. We thought at first that if we could get seven to ten women out we would be satisfied. There were 22 at the first meeting, 55 at the next, 42 at the next, and not less than 25 at any succeeding meeting. Recently we held our annual canning meeting, when a steam pressure canner was shown. It was used to cook a five-year-old fowl, in the presence of the members, who were given a chance to taste it. A fireless cooker was opened up, and a New England boiled dinner sampled, and there was a general exhibit of canned vegetables and meats, labeled so as to tell the process used.

Briefly, I will say that I think perhaps the secret of our success is that we have always had a fine program which features some specially interesting and practical work, with always some good instructor or speakers. The state college and our home bureau agent and her assistant have furnished the speakers. The next most important thing in making our club a success has been the full publicity given each meeting in our nearest city daily and in our county weekly. We have something good, and then we tell all about it, so that those who were too prejudiced to come at first are glad to join with us later, for various reasons. Also, we have urged every woman within reach to come to the meetings, which have been held in the homes of the members, whether she cares to join the club and pay the $1 membership fee or not. In the end most of them have joined and paid their fees. This is not so important as that we make them want to come to every meeting. If you haven't a neighborhood club, organize one at once. Maybe it will fall upon you to do a good share of the work in starting, but it will be effort well spent. These things only start when someone pushes them. Two branch clubs have been organized near us already, as the meetings were so big. There are twenty-two live clubs in our county.

New York.

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JANUARY 1, 1920

Keeping the Schools Up to Date

RECENTLY an educational congress was held at the Pennsylvania state capital, when the leading pedagogues met and discussed modern means and methods. As is to be expected in this state, the rural school came in for a lot of constructive criticism. Poets have sung for a long time the fame of the "little red school house," but in the march of present-day progress it seems doomed to give way to better things. The agricultural education section of the congress, after much careful deliberation, arrived at certain conclusions which might be interesting to note. The rural community vocational school which has met with such success in Pennsylvania was strongly endorsed and a general adoption of this idea urged as rapidly as financial support can be obtained. As an example for prospective schools, the department of public instruction was requested to completely finance one or two rural community vocational schools and one or two rural elementary schools in different sections of the state so as to establish the approved types of school organization and courses of study. In line with this were the recommendations that rural teachers be provided with homes, becoming known as teacherages, in the community where they teach, and that a high standard of qualifications for teachers be set up, with an adequate salary. This is an excellent plan to adopt where a community cares anything about a permanent existence. The fact that teachers have to live 365 days each year is often lost sight of when they are asked to work for a pitiable salary for five to ten months and then sell books or some other side line to make both ends meet. When the teacher lives and works with and for the community the year around, progress is made and an interest in school work is created which could never exist under the old plans. In view of these recommendations it is apparent that the conference favored the consolidation of rural schools as rapidly as possible. While considerable opposition is felt in some sections regarding consolidation, many instances could be cited where the plan has worked out exceptionally well. It seems to depend a great deal on the matter of good roads as much as anything. Where a section has only mud roads which are impassable for many weeks of the school term, even a short trip is wearing on the scholars, but where hard roads, usable at all times, are found, transportation to a central building, in convenient auto busses, under proper supervision, has been found to put a new spirit and efficiency into school work. The new commissioner of education in Pennsylvania, Dr. Finegan, has great faith in the work of the rural schools, and is doing all he can to improve a situation in the state which has become critical but can be turned triumphant if the proper support is given for the benefit of the present and coming generations.

Can we Gain by Adding a Month?

HAVE you had called to your attention the attempt which is being made to add another month to our calendar. The plan is not to add more days to the year, but simply to divide them evenly so as to make thirteen months of twenty-eight days each. For ordinary years this leaves one day over, and when leap year comes, two extra days would have to be accounted for. To remedy this defect it is intended to have New Year's Day an independent legal holiday, not included in any week or month, and "Correction Day" will come every four years as another independent legal holiday. Since the number or length of our present months is not governed by the moon or any national law, the proponents of this new arrangement point to the fact they can be changed by law whenever we see fit, and congress has already been petitioned to do this. The extra month is to be called "Liberty," and will be inserted between the present months of February and March; otherwise the names of the months will remain the same. The main argument in favor of this change is the saving of time and mental effort which it is supposed to make. For instance, it is pointed out a promissory note given for any number of weeks, months or years would always come due on the same day of the week it was given. Just why we should always have to have Fourth of July and Christmas come on Wednesday, or Good Friday and Easter Sunday never vary, just to make things easy for some person who has a promissory to note to pay, it is hard to see. The monotony of having to look at the same calendar for the next thousand years is also not a pleasant prospect; so, as far as we are concerned, twelve months, and holidays coming in variety, will suit us until we have no need for further measurement of time.

Dollars for Letters as Well as Eggs

FEBRUARY 15th for a number of years has been the time for our annual poultry issue, and this year is to be no exception to the rule. The situation today in the poultry industry is only what the farseeing men predicted a short time back when many voices were lamenting conditions and breeding stock was being sacrificed on all sides. Feed, the largest cost item for the average poultryman, is still high, but so is dressed poultry and especially eggs. When can you recall one dollar as being a common price to ask—and, what is more, receive—for a dozen strictly fresh eggs? Flocks which other years have been considered more or less of a necessary nuisance about the barn have taken on a new valuation and are receiving attention which they should have always been accustomed to. All this means that there ought to be an unusual lot of experience stories this year about poultry—and this includes ducks, turkeys, geese and guineas as well as chickens—which our readers can send us for our annual poultry issue. In our December 1st issue we outlined our plan for this year's special numbers, and need only remind you here that we will want about twenty-five letters to publish February 15th. We will pay a dollar for each one we use at that time, and they need not be long. From 200 to 400 words is about the right length, and each letter must be about one definite phase of poultry-keeping. If you want to tell us about more than one thing, write as many letters as you want, and we have no objection to sending you more than one prize if your letters cover the points better than others we receive. The ones we don't use we will return, if you enclose postage, or pay you fifty cents apiece for them if we use them later. February 1st is the latest date we can receive letters for use in our annual poultry issue.

Farmers' Annual Business Conferences

JANUARY is the farmers' convention month in Pennsylvania and New Jersey. All of the leading agricultural associations in each of the states will hold their annual meetings and bring to their capital cities a sample of their products to show what the past year has brought forth. The New Jersey meetings will be held in Trenton, January 13th, 14th, 15th and 16th, while Pennsylvanians will meet in Harrisburg, January 20th, 21st, 22d and 23d. In both places this year dairymen are making special efforts to have large meetings. Substantial prizes have been offered for milk and dairy products, and prominent speakers engaged. Dr. E. V. McCollum, who made the new discoveries in nutrition, will address the producers and consumers in both states in joint sessions, and every dairyman should obtain first hand these vital facts about his business. The fruit growers have long been noted for their regular attendance at meetings affecting their business, and it would be well if all farmers could get the same reputation. While it is true the very nature of the dairy business prevents many men from leaving home more than a few hours, the time has come when those who want to stay profitably in the business must get away more and mix in gatherings concerning their industry. Attractive plans have also been made in both states for the women who attend the meetings. Complete programs and other information of all meetings may be obtained by addressing a postal card to the secretary of agriculture at Harrisburg or Trenton.

Arthur J. Anderson

IT was with the deepest regret that we learned of the death of Arthur J. Anderson, editor of the *Pennsylvania Farmer*, at his old home in Michigan on December 10, 1919. Ever since that paper moved to Philadelphia, in 1912, Mr. Anderson had been its editor. Because of his pleasing personality and personal concern in all agricultural matters Mr. Anderson made hosts of friends interested in his line of work, and always had a ready bit of advice for those who sought his judgment. His early life on the farm, in the district school, two years before the mast of a lake steamer to obtain funds for his college education, and deep interest in church work, gave him a broad vision and sympathetic viewpoint which is denied many who lead less active lives. As he was only 41 years of age, eastern agriculture loses one of its leaders just at a time when the experience and foresight of such a man is sorely needed, and we who knew him personally lose a sincere friend who was ever ready with a kind word.

T. H. W.

Bulletin Helps for Farmers

Farmers' Bulletin No. 1059, "Sweet Potato Diseases," in an interesting 24-page illustrated treatise of the field and storage troubles of this crop. It describes the various ailments, and recommends treatment for their prevention and cure.

"The Flat-Headed Apple Tree Borer," Farmers' Bulletin No. 1065, describes clearly this serious orchard pest, which is found throughout the greater part of the United States. Numerous illustrations leave no doubt regarding the injury done by this borer, and methods are given for its control.

"Tuberculosis in Live Stock," Farmers' Bulletin No. 1069, devotes 31 pages to a study of the detection, control and eradication of this prevalent disease among cattle. It has many valuable suggestions which may be practiced by owners of either large or small herds, and should be read by every live stock owner.

Any of the foregoing farmers' bulletins may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

Garden Notes for January

W. F. MASSEY

Those who use the portable three-sash frames, which I have often mentioned as best for the home garden, can, if they use double-glazed sashes, after the Christmas crop of lettuce is cut, move them to fresh soil that has been heavily manured in the fall, and plant to lettuce again for early spring heading. Another frame can be used to grow plants of Spanish onions, either the Prizetaker, Giant Gibraltar, or any of the large Italian varieties, to make plants for transplanting in the early spring. Also sow seed of the Copenhagen Market cabbage to get plants ready for setting as early as the soil outside can be worked in good order.

Where fall-sown cabbage plants are being wintered over for spring setting the frames need not have the sashes over them in bright, sunny weather if the mercury is above 25 above zero, and even in hard freezing weather there must be air given on sunny days, the object being to keep the plants dormant. In Virginia, Maryland and southward, of course, it is best to set the plants out in the fall. In fact, they will winter anywhere from Baltimore south in average winter weather.

The Copenhagen Market cabbage should not be sown in the fall, for it will invariably run to seed in the spring. Sown in a frame in January, it will make a good succession from immediately after the Early Jersey Wakefield.

With the double-glazed sashes, beet and radish seed can now be sown in a frame in rows six inches apart, sowing beets and radishes alternately. After the seed germinates and the plants are well up, some nitrate of soda carefully sprinkled between the rows will push them along, and the radishes can be removed before the beets need all the room. Then the beets can be grown on till the frame is needed for tomato plants from the house. Then the beets will stand any late rost.

At every opportunity prepare hills for cucumbers, cantaloupes and squashes, and get the manure into them to rot till planting time. This is much better than using fresh manures in the spring. Then when planting in spring add a small handful of good fertilizer to each hill and cover with soil.

Cauliflowers wintering in frames need to be treated like cabbage plants, except that they had better be kept very slightly closer, as they do not stand as low a degree of cold as cabbages.

Parsley will be all the better for sashes over it to prevent singeing by cold. Here I find that it does very well, where sheltered from the west and northwest winds, in the open ground, but where a plentiful supply is needed all winter the double-glazed sashes will keep it in fine shape.

A three-light frame sown thinly broadcast now with Grand Rapids lettuce seed will come on early with a plentiful supply of loose-leaf lettuce. In fact, there are many things we can have in winter, even around the upper end on the peninsula, with the aid of the portable frames and the double-glazed sashes.

Now is the time to plan the garden planting. Note carefully the locations of the various crops last season, and follow with a different class of plants. Do not follow cabbage with lettuce or radishes, and vice versa. Do not follow tomatoes with tomatoes, egg plants or peppers. That is, get a root or underground crop where a leaf crop grew last year, and vice versa.

Get the catalogs of the leading seedsmen, and select mainly the standard and well-tested varieties, touching the novelties lightly, never depending on a new variety till it proves standard. Get all the garden rubbish cleaned up and in the compost pile, and if you did not cover the entire garden with manure in the fall, do it at once.

Grape Cuttings for Future Vines

Farmers wishing to set out vineyards will profit by making grape cuttings and getting them ready for spring planting, according to horticulturists at the Ohio Experiment Station. A number of cuttings may be made from one vine, and after one year of cultivation in a small nursery lot the young vines are ready for planting.

Cuttings should be taken from new wood, each cutting having two to three buds upon it. The cuttings are from eight to twelve inches long, the bottom being trimmed close to the first bud, while the top of the cutting has two or three inches of wood above the top bud.

These are tied in bundles and placed in damp sand in the cellar or buried out of doors and covered to prevent injury from severe freezing.

In the spring the cuttings are set in rows three feet apart and four inches in the row. Only the upper bud is allowed to extend above the ground, so that the other buds will develop roots.

A Worthwhile Fruit Meeting

The great horticultural event of the year for the people of the Delaware-Chesapeake Peninsula is the meeting of the Peninsula Horticultural Society at Chestertown, Md., January 6, 7 and 8, 1920. A very interesting program has been prepared. Dr. Thos. J. Headlee, entomologist, of New Jersey, will be present and give the up-to-date methods of controlling insects that infest farm crops, especially the orchard.

B. W. Leach, of the United States Bureau of Entomology, will give in detail the results of work in Delaware during 1919 in preventing the injury of the so-called sideworm.

A half dozen or more of the best men in the Maryland Agricultural College have agreed to be present. Delaware College will be represented by Prof. C. A. McCue, Dr. Thomas F. Manns, Professor LeCato and others.

It goes without saying that the best practical men of the Peninsula will be on hand with papers and will enter into the discussion and so give the results of their work during the year.

The most successful farmers invariably are those who work hand in hand with the agencies which are trying to improve agriculture.

A Letter from the National Grange

The National Grange recently made public a letter addressed to Chairman Cummins, of the senate interstate commerce committee, urging no further delay in passing legislation for the turning back of the railroads to their owners. In this letter Prof. T. C. Atkeson, Washington representative of the National Grange, quoted the resolution adopted at the recent annual session at Grand Rapids, Mich.: "The Grange approves the general principles of railroad legislation now pending in congress to return the railroads to their owners." This sets at rest any question about the position of the farmers of the country in so far as their voice is expressed by this organization.

The opposition of the Grange to any guarantee of dividends is strongly expressed in this letter. This opposition is based on Grange precedent and principle, not on the question of how much or how little it will cost, but on the "broad human proposition that the moment a specified return on investment is guaranteed in any way, at that moment the incentive to full efficiency and economy of operation ceases to function; and that our democracy is founded on the principle of private enterprise, private initiative and individual efficiency. Because of this," the statement concludes, "we suggest that no provisions be left in this railroad legislation which seek to socialize or nationalize railroads even to the extent of an implied guarantee of earnings."

Professor Atkeson also suggests the elimination of the provisions for a new railroad transportation board, on the ground that the interstate commerce commission can and should perform all the necessary administrative work to give force and effect to the railroad policy laid down in the Cummins bill. This in, in effect, an endorsement of the Esch bill in this particular respect.

Leslie R. Smith, of Hadley, Mass., was re-elected master of the Massachusetts State Grange last week. B. John Black, of Roslyn, Md., was re-elected master of the Maryland State Grange. Herman Ihde, of Neenah, Wis., is the new master in Wisconsin, succeeding A. R. King, of Omro, who becomes a member of the executive committee. State Master J. H. Roosa, of Delaware, was re-elected. Numerous state Grange meetings report unusual interest and activity and material growth.

Opponents of pending legislation to create a dye-licensing commission have made a strong case against the Longworth bill, which has passed the house and is before a sub-committee of the senate finance committee. The Washington representative of the Grange attended this hearing to express the opposition of the Grange to all licensing schemes. As to dyes the farmers have no specific interest, but if the principle is established that a commission may be named with power to say whether or not any commodity may be imported, then agriculture becomes vitally interested, for this means, perhaps, that the next commission named may be to shut out potash or nitrates.

Query Answered

Potatoes Rotting.—W. D., Chevy Chase, D. C., writes us: "I should like to ask what to do in the following case: Since storing my late potatoes in the cellar for winter use, I find that there is a blight which appears on the skin and eats into the potato. Will you kindly tell me if there is anything I can do to prevent this from spreading through the entire crop?"

Overhaul the potatoes, and cull out all damaged tubers. Then return the sound potatoes, dusting them with air-slaked lime as re-stored. This will probably check the rot. W. F. M.

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Experience With Seeding Clover

JOHN DAY

My experience has been that the safest course to follow in seeding clover is to sow one-half of it when the ground is alternately freezing and thawing during midwinter or early spring, or else to sow it on the melting snow, and to sow the other half in a grain drill when the field is dry enough in the spring for such practice. The objection to broadcast sowing on the snow is that more seed is necessary, and, with clover seed high in price, this increases the expense of establishing a stand, in addition to resulting in failure many times.

I like best to wait until the fields are dry enough in the spring so that I can sow about 8 to 10 pounds of clover seed per acre in a grain drill, but often this plan fails, as in my section dry weather is liable to occur during April and May which will kill out the young clover. On the other hand, often the broadcasting method of sowing on the snow or freezing and thawing ground works out excellently and yields a fine stand.

I suggest the use of sweet clover in my territory for winter seeding, sowing 12 to 15 pounds per acre where unhulled seed or that which has not been scarified is used, or of the use of hulled, scarified seed early in the spring when the soil is sufficiently warm. Unscarified seed will not be injured during cold weather, and will germinate when warm weather arrives. The sweet clover affords fine pasturage, and will reseed itself where properly handled. It is satisfactory for silage where cut at the proper stage, and is also suitable for hay under proper method of harvest and curing.

The outstanding fact of importance about sweet clover is that it will do well on poor lands, particularly fields which are too wet for the average clovers. The crop makes good yields, as well as simultaneously improving the fertility of the soil. Where the clover is used it should be sown with mixed grasses for grazing purposes, or else sown alone with grain for hay, pasturage, silage or soiling purposes.

The common varieties of mammoth and red clover in my section average about one and one-half tons to the acre on $50 land, and during an exceptionally favorable season as high as two and one-half tons to the acre. Usually only one crop is harvested a year, as the farmers find it more profitable to graze the aftermath and to realize the fertility value of the manure spread by the live stock rather than to make a second cutting.

I recommend the sowing of about five pounds of alfalfa seed to the acre with the clover, which is sown in the drill late in the spring, on land propitiously situated for alfalfa, on a farm where the owner aspires to raise this crop. This light seeding will serve to inoculate the soil, and will be of value for the subsequent follow-up campaign of getting the field into alfalfa.

Virginia.

New York Crops and Wages

This has been a good year for New York farmers. Spring grains and several kinds of fruits gave light yields, but the general average yield of all crops combined was substantially better than usual, and prices have been high. According to John B. Shepard, of the United States Bureau of Crop Estimates, the value this year of the crops raised in New York averages $2400 per farm. Ten years ago, when the last United States census was taken, the value of crops per farm was less than $1000, and the average gross sales per farm, including live stock products, probably did not much exceed $1100. About a third of this amount was spent for labor, feed and fertilizer. Five per cent. interest on the capital invested and the upkeep of machinery about equaled another third, leaving the average farmer only about $350 a year for other farm expenses and for his labor. The rapid change in conditions is shown by the fact that this year married farm hands working by the month have averaged about $630 cash wages for the year, in addition to the use of a house and the equivalent of about $150 in farm produce, such as firewood, milk, potatoes, fruit, etc.

Farm wages during 1919 were about 10 per cent. higher in this state than they were last year. Single men received an average of $43.30 per month and board, and men hired by the day were paid an average of $2.70 per day and board, except during the harvest season, when wages were about 60 cents per day higher. Day laborers who were not provided with board received an additional 70 cents per day. Since 1905 monthly wages have increased 70 to 75 per cent., day wages during the harvest season 80 per cent., and day wages at other seasons 100 per cent.

New Jersey crop statistics tell us that potatoes this year are only 68 per cent. up to scratch, apples 66, peaches 68, and tomatoes 40.

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Foreign Versus Native Crimson Clover Seed

A. E. GRANTHAM

Is foreign crimson clover seed as satisfactory as native-grown seed? This is a question that has been discussed by Delaware farmers for a number of years. The popular opinion is that the Delaware seed is to be preferred. In previous tests the Delaware Experiment Station has not found any marked difference in the two classes of seed, providing they were of equal germination and free from impurities. In order to more fully investigate this problem, the department of agronomy of the station secured, in July, 1918, through the aid of the bureau of plant industry of the United States Department of Agriculture, a lot of Italian and French-grown seed.

Sufficient seed of each kind to sow an acre was sent to three farmers in different parts of the state. Each farmer was also provided with enough Delaware-grown seed to sow an acre. One test was made near Dover, on land occupied by tomatoes, and seeded at the last working; another, near Seaford, on land that had been in wheat, then plowed and especially fitted for the clover; the third on a farm near Laurel, in standing corn at the last cultivation. The three kinds of seed were thus sown under three different conditions. The late autumn and early spring examination of the crop showed that the Italian and French seed were equally as vigorous and of as good stand as the Delaware seed. In two or three cases—at Dover and Seaford—the Italian clover was noticeably superior to the other two. About May 20th the fields were again examined. The foreign seed was in every case as good as any grown, the Italian still maintaining the slight advantage in size and vigor. On the Laurel farm the native-grown seed was a little later in heading than either the Italian or French.

The general conclusion from these tests is that the foreign seed makes as good growth as the Delaware-grown. The indications are that the Italian seed is superior to both French and native-grown.

The chief objection to foreign-grown seed in the past is probably due to the fact that some of it has been placed on the market when too old to germinate fully. Anyone buying crimson clover for seed should make a careful germination test before seeding. This can be done very quickly and easily, and should be resorted to before purchasing the seed in quantity.

Selling Plant Food From the Farm

E. G. MCCLUSKEY

Every crop taken from the land removes its quota of plant food—ammonia, phosphoric acid and potash. Particularly in grain farming sections, plant food is sold from the farms, and if replaced at all it is in amounts altogether too small to maintain the crop-producing power of the soil.

Looking at it from one angle, it is the farmer's business to sell plant food in farm crops—in hay, milk, grains, vegetables and crop by-products. It is astonishing how much plant food is sold from the land—most of it never to return—in just this way. For instance, an acre of wheat yielding 30 bushels will remove 67 pounds of ammonia, phosphoric acid and potash; an acre of corn yielding 75 bushels will remove 128 pounds; an acre of oats yielding 60 bushels will remove 76 pounds; an acre of rye yielding 25 bushels will remove 50 pounds; an acre of millet yielding 40 bushels will remove 63 pounds, and an acre of buckwheat yielding 40 bushels will remove 70 pounds.

If this plant food is not replaced the productivity of the soil is bound to be lessened and succeeding crops will be reduced. Some of this "sale" of plant food will be made up by methods of good farming—rotations, legume crops and the like. Some will be returned. Some must be purchased in commercial fertilizer. Unless the farmer can sell his crop at such prices as to make it possible for him to replace these plant foods in quantities sufficient at least to maintain the crop-producing power of the soil, he and the country in which he labors will fast approach agricultural ruin. Economic agriculture is impossible when prices of farm crops are too low to permit replacement of plant food.

As an illustration, note the effect which the opening of the great West had on the fertility of Eastern soils. Land of virgin fertility was given away. Products from these free lands came into immediate competition with products of the older soils of the East. Profitable agriculture in Eastern regions ceased to be possible.

With the increase in prices of farm crops comes realization of the fertility cost of growing these crops and of the necessity of replacing the plant foods sold from the farm. No soil can permanently stand plant food strain arising from continuous sale of crops.

Maryland.

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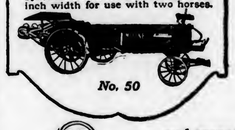

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Getting Fertile Eggs

M. G. FEINT

This is not difficult with the smaller, more active breeds like Leghorns and Anconas, but with Rocks, Wyandottes or Orpingtons this is a problem deserving attention. Early mating is very essential. I prefer to mate up my Buff Orpingtons in the fall or early winter, as sometimes I have found that a new male bird is shy and offish for some months, particularly if there are other males in the flock. I lost one fine young cockerel last spring in that way, as the customer waited until just about the time he wanted to begin saving eggs. After a long journey by rail the bird would not mix with those in his new home, and after a couple of weeks his new purchaser axed him. There was nothing for me to do but to refund the purchase price, minus his market value, though I was confident that if he had been placed in his new quarters a couple of months earlier he would have made a good breeder.

I do not put over ten hens of this big breed with a male, and I like to alternate the males, keeping one shut up each day. Mating is much more satisfactory then, as the males have a chance to rest and eat on their quiet days and are glad to get back to their flocks again.

Plenty of exercise is of prime importance with all breeds if fertile, hatchable eggs are wanted. When the winter is mild and open so the poultry can get out of doors a great deal, the early hatches ought to be better than usual. When the hens cannot get out every day they should be kept busy all day long digging cracked corn and wheat from a deep, clean litter on their floors.

Nothing is more discouraging than to fuss with a lot of unsatisfactory eggs, weak in vitality and poor in hatching qualities. I prefer to keep more males and give special attention to the matings and to the exercise question, as it is far cheaper in the end. Neglect of this matter may ruin a whole season's work, as the hatches will be poor, and if remedied after the first failure, the later hatches will be too late to be as profitable as they should be. *New York.*

Feeding for Eggs in Ohio

In our last issue we gave the recommendations of the New Jersey Experiment Station for winter feeding. Now we will see how it is done in Ohio, according to E. L. Dakan, poultry specialist at the Ohio State University. A ration of 100 pounds of corn and 50 pounds of oats is a good one for winter feeding, says Mr. Dakan. This should be fed morning and evening. Feed lightly in the morning, and scatter the feed in a deep litter of straw so the hens will have to scratch for it. A good practice is to mix the corn and oats, but if this is not done, then feed the oats in the morning and the corn at night. This night feed should be as late as the hens will remain off the roost. They should be given every grain of corn they will eat.

This mash is usually spoken of as the egg-making part of the ration. A satisfactory mash can be made of 100 pounds each of cornmeal, wheat middlings, wheat bran and meat scraps or tankage.

Keep this before the hens in a self-feeder all the time. If milk is given, the amount of meat scraps or tankage can be reduced. Do not entirely eliminate it, however, as to do so will reduce the amount of dry mash consumed. Do not expect these directions to give immediate results. It will take at least thirty days to show results.

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You have Absolute Control of the Saw at all times.

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I received your "More Eggs" Tonic and found it was a great Godsend. I was only getting 12 eggs a day, and now I am getting 50 per day.
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400,000 Poultry Raisers Praise "More Eggs"

The few letters printed below voice the sentiment of over 400,000 poultry raisers in all parts of America who have bought, tried and tested my "MORE EGGS" tonic. Their experience is a true sign of what you may expect and can do in increasing your egg yield through the use of "MORE EGGS," the most wonderful egg producer known.

"More Eggs" Paid the Pastor
I can't express in words how much I have been benefited by "More Eggs." I have paid my debts, clothed the children in new dresses, and that is not all—I paid my pastor his dues. I sold 42½ dozen eggs last week, set 4 dozen, ate some and had 1½ dozen left.
MRS. LENA McBROON, Woodbury, Tenn.

1200 Eggs from 29 Hens
The "More Eggs" Tonic did wonders for me. I had 29 hens when I got the tonic and was getting 5 or 6 eggs a day. April 1st I had over 1200 eggs. I never saw the equal.
EDW. MEKKER, Pontiac, Mich.

$200 Worth of Eggs from 44 Hens
I never used "More Eggs" Tonic until last December; then just used one $1.00 package and have sold over $200 worth of eggs from 44 hens. "More Eggs" Tonic did it. A. G. THODE, Sterling, Kans., R. No. 2, Box 47.

1368 Eggs After One Package
Last fall I bought a package of your "More Eggs" Tonic and would like to have you know the result. From January 1st to July 1st my hens laid 1368 eggs. A. E. WHITE, Scranton, Pa.

1707 Eggs in 21 Days
I read the report of the woman poultry raiser in Waverly, Mo., only ten miles from Dover, getting 1500 eggs from 160 hens in 21 days. I have that record beaten a country block. I have only 135 hens and in 21 days I got 1707 eggs. Beat that if you can. I am feeding "More Eggs" to my hens. MRS. WILLARD SMITH, Dover, Mo.

858 Eggs in 21 Days—Used Two Boxes of "More Eggs"
I have fed about two packages of your egg tonic to 60 hens and have gotten 858 eggs from Jan. 21 to Feb. 11, and I think that is wonderful.
MRS. ERNEST RUBISON, Republic, Mo.

Results Guaranteed!

Here is the facsimile of the guarantee of a million dollar bank that that "More Eggs" will produce results. The million dollar bank guarantees to refund your money if you are not satisfied. You run no risk.

You, too—

can get more eggs from your hens. Surely, if Reefer's "More Eggs" can bring such wonderful results for 400,000 chicken raisers, all over the country, it can do the same for you. Read the letters:—double, yes triple egg production! Don't hesitate, Read my free offer. You take no risk. Results *guaranteed.* Send the coupon today—at once.

160 Hens 1500 Eggs

LAST winter eggs sold as high as $1.00 a dozen. I predict that this winter eggs will go even higher. This is my judgment as America's foremost poultry expert. Poultry raisers are going to reap tremendous profits. You, too, can make sure of a big egg yield by giving your hens a few cents' worth of Reefer's "More Eggs" Tonic. This product has already been tried, tested and proven by 400,000 chicken raisers. It has stood the test of years and is acknowledged the best and most successful egg producer on the market today. Every day that you don't use it means that you are losing money. Start with a few cents' worth of Reefer's "More Eggs" Tonic. Act now!

Got 117 Eggs Instead of 3

That's the experience of one enthusiastic poultry raiser who wrote me. Read the wonderful testimonials printed below and remember they are just a few out of *thousands.*

160 Hens—1500 Eggs
I have fed 2 boxes of "More Eggs" to my hens and I think they have broken the egg record. I have 160 White Leghorns and in exactly 21 days I got 125 dozen eggs.—MRS. H. M. PATTON, Waverly, Mo.

Banker Endorses "More Eggs"
Some time ago I got from you "More Eggs" and it now means MORE EGGS. I am now fully convinced of its utility. I have 14 pullets and 14 hens one year old and the first 10 days of December they laid 11 dozen eggs.—Yours very truly, H. F. POHLAND, President, The Citizens Bank of Ashland, Ore.

8988 Eggs from 125 Hens
Since using the "More Eggs" I have got more eggs than any time I have been in the poultry business, about thirty years. Since the 15th of March to November 16th I have marketed 740 dozen and only have 125 hens.—MRS. W. S. DEAHL, Exline, Iowa.

1368 Eggs After 1 Package
Last fall I bought a box of your "More Eggs". From January 1st to July 1st my hens laid 1368 eggs.—A. E. WHITE, Scranton, Pa.

This $1 Package FREE

I have convinced over 400,000 poultry raisers of the value of my "More Eggs" tonic. I want to convince *you.* My *free* offer is made in the sincere hope that you will give me this very opportunity. I know what your verdict will be when you once try "More Eggs"—but my difficulty is to get you to *ACT*—to get you to decide *NOW* that you will give "MORE EGGS" an honest and fair trial. Won't you do this—when I offer you a package FREE, just to show how I can make your hens lay more eggs? Why delay? Others are getting more eggs than they ever dreamed of getting; you can do the same.

How to Get the Free Package Fill in and mail to me the coupon below. Enclose only $1.00, the price of one package. I will send you two $1.00 packages of "MORE EGGS"; one package *FREE!* Keep the extra package; or better still, sell it to a poultry friend, so you can get your money back and have your own package for nothing.

Results Guaranteed!

The Million Dollar Merchants Bank of Kansas City, Mo., absolutely guarantees that "More Eggs" will produce satisfactory results, that you will be satisfied in every way or your money back. You don't run the slightest risk.

Send Coupon!

Just fill in and mail coupon with only one dollar. I will immediately send you two $1.00 packages of "MORE EGGS" the extra package being FREE! Don't wait! Eggs are steadily advancing in price and will soon reach the $1.00 per dozen mark. Reap the BIG profits "MORE EGGS" will make for you. Don't let your neighbor get the advantage of you. Act NOW! every days delay means extra egg profits lost. Send the coupon today.

E. J. Reefer *Backed By a Million Dollars!*
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$1 Package FREE
E. J. Reefer, *Poultry Expert*
4351 Reefer Bldg., Kansas City, Mo.
Dear Mr. Reefer:—I accept your offer. Send me the two $1.00 packages of Reefer's "More Eggs" for which I enclose $1.00. You agree to refund $1.00 if both of these packages do not prove satisfactory in every way.
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Address..........

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3—Fleece-lined—warm and dry

NO more dirty, mud-clogged overshoes! Here's something new—an overshoe that you can *clean instantly*—no matter how dirty it is! Dash a pail of water over it—or hold it right under a faucet—and every trace of mud washes quickly off its smooth rubber surface.

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Think of having an overshoe as warm and convenient as an arctic—as water-tight and easily cleaned as a rubber boot! That's the new U. S. Walrus—don't forget that name! In every way it's the farmer's ideal overshoe.

The U. S. Walrus is made by the oldest and largest

"U. S." Walrus—An overshoe with an all-rubber surface that can actually be washed off after wearing. Warm as an arctic. Absolutely water-tight. All weights and sizes; in red, black, and white.

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rubber manufacturer in the world, and *built to last.* The sole consists of heavy layers of the finest rubber. Every point of strain is specially reinforced.

Ask your dealer today to show you the new U. S. Walrus. After you've worn a pair for a day or two, you'll realize why they're fast becoming so popular with farmers everywhere.

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No matter how much you're on your feet, nor what sort of work you do—you can find in U. S. rubber footwear exactly what you need.

There's the U. S. Arctic, designed especially for wear in cold, snowy weather; U. S. Rubbers, made in all sizes and styles for men, women, and children; U. S. Bootees, which lace smoothly over your sock like an ordinary shoe, yet are as water-tight as the Walrus; and U. S. Boots, which you'll find described below.

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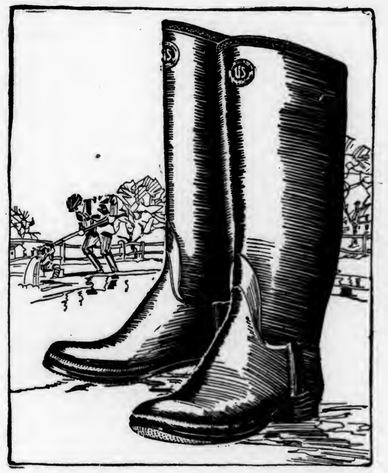
1—**The sole**—Five soles in one, all of the finest rubber.

2—**Back of the heel**—Every step you take puts a strain on the seam in back. At this point every U. S. Boot is reinforced with *ten thicknesses.*

3—**The toe**—Won't break through like the toe in so many boots. It has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.

4—**The "bend" in front**—A boot has no lacing in front to "give" as you walk. Every mile you cover, the rubber there bends and buckles 750 times. Six heavy thicknesses give long wear to U. S. boots at this point.



"U. S." Boots are made in all sizes and styles—Short, Storm King, Sporting and Hip. In red, black and white.

Ask for "U. S."
RUBBER FOOTWEAR

United States Rubber Company

Trapping Tricks for Farm Boys—V

CHARLES H. CHESLEY

To the average amateur trapper the muskrat is the most important of the fur-bearers, not only because of the fact that the creature is easy to capture, but because he is found almost everywhere that there are ponds, rivers and wet swamps. Along the coast line, in the salt marshes and in shallow ponds they are often found in almost countless numbers. A few years ago the writer usually trapped a considerable number each season, and received on an average about 20 cents per pelt. Spring rats might bring 40 or 50 cents at that time. Today I have before me a price list quoting a price of $3.50 for the largest size fall rats, and the smaller ones bring from $1 to $2. Surely there is a golden opportunity for farm boys just now in trapping muskrats.

It is usually much easier to capture muskrats during the fall than after cold weather comes on. However, there are many localities in the Middle Atlantic States where trapping may be carried on right through the winter. The muskrat does not become fully prime until late winter.

The No. 1 single-spring trap is usually used for muskrats when trapping is done in the vicinity of their houses and about the feeding grounds. Where the animals are abundant, canals and slides will be found. Set the traps in such places where the water is not more than three or four inches deep and no bait is needed. The one hindrance to this kind of trapping is the fact that many rats get away by gnawing or breaking off the foot. I have caught a goodly number of muskrat feet during my years of trapping, hence I have decided that it is better and probably more humane to set the traps along the banks where the water falls away to a foot or more in depth. Set a stake at the end of the trap chain, and then the captive cannot reach solid footing. In that case he soon drowns. Carrots, parsnips and sweet apples make good muskrat bait. It should be suspended above the trap. In shallow ponds, where the conical houses of the rats abound, numbers may be taken by putting the traps near or at the entrance to such houses. This is not sportsmanlike, perhaps, and some states have enacted laws prohibiting such trapping.

Where rats are numerous and a boat can be used, there is no better way than by the use of a sunken box or barrel. This should be arranged with a tipping cover so that the weight of the animal will precipitate him into the receptacle. If barrel is used, have it water tight, and sink it so it will protrude about three inches above the surface. Place bait on the cover, and have a few inches of water in the bottom. Several may be taken in one night by this method.

Mink sets may be made along with those for muskrats, as the two animals frequent much the same localities. I have often taken minks in the sets made for rats. The mink, however, is rather more wary, and some skill is necessary to successfully outwit the sly fellow. If signs of the animals are about, they may be captured by using fish for bait. When trapping for muskrats along meadow ditches it is well to put a few drops of some lure near the traps. In this way minks are frequently taken. Some trappers use elaborate scents composed of various ingredients, but to my mind there is nothing better than fish oil, which has been mentioned in an earlier article. A few drops of this, splashed near the sets, will call the animals from a distance. Water sets are best for the boy who has not had much experience in trapping.

Along woodland creeks and brooks make sets in hollow logs and holes in the bank. A mink passing up or down the brook will be pretty sure to pass through any hollow log which he finds. When setting in earth or among leaves, place a bit of cotton or fur of the rabbit under the pan of the trap. Make an excavation large enough for the trap, and cover lightly with earth or leaves. Handle the trap with gloves to avoid leaving scent upon it. The carcass of a muskrat or rabbit makes good mink bait, but fish is preferable to anything else.

Water sets should be made in shallow water close to steep banks, also upon sand bars where small brooks enter larger streams. Suspend a bait above the trap, or splash fish oil upon the bank. Traps should be covered by from one to two inches of water, and need not be concealed. If set in sand, be sure to place something under the pan so as to keep drift material from collecting.

Single-spring traps of the No. 1½ size are used for mink. I have also used No. 2's of the kind that have double springs under the jaws. This is a very effective trap to use for mink, having a wide set and being strong enough to hold a raccoon, should one happen along. Where the otter is found, trappers make a few mink sets with larger traps. Set just at the foot of miniature cascades in small brooks. The otter will be quite likely to slide down such a place, should he pass that way. If the water is not more than six inches deep at the foot of the fall, you will stand a chance of catching the fellow. Use a drag or chain with large grapple hooks for the otter. He is a strong fellow and adept at getting out of tough scrapes.

The mink is selling pretty high this season. Good northern skins of the dark variety may bring $20. The species with fur of a brownish tinge, found along the ocean coast principally, are of less value. The otter skin is always valuable. Both of these pelts should be stretched long and narrow. They should be "cased" in removing.

Cut out the old raspberry canes, and thin the new ones a bit. Have you the New York State College raspberry bulletin, R. C. F. 36? A card to Ithaca, N. Y., will bring it to you.

Sing a song of seed corn,
A storehouse full of ears;
Better save enough this fall
To plant two future years.

Tennessee has adopted the farming slogan of "Lime, legumes and live stock."

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Looking Ahead to this Year's Work

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1284, FEBRUARY 1.—Tell us how you make maple sugar products on the farm. Do not forget some of us have never tapped a tree, so describe briefly all the necessary steps.

TOPIC No. 1285, FEBRUARY 15.—"Neighbors—Good and Bad." Everybody can write on this subject. Tell us about some of the neighborly arrangements you have which work to advantage. Maybe your opinion, with reasons, about an undesirable neighbor may cause some of us to stop and ask ourselves some questions, so give it, if you are troubled this way.

C. C. C., Jr., Penn Laird, Va.—While it is not our desire to lessen any of our crops or live stock the coming year, circumstances will compel us to do so. The recent great slump in practically all live stock caught us unawares, and we, like many others, broke even, with a great deal of hard work thrown away. We sold some eighty-odd beef cattle at a public sale, and the recollection of the sting will remain long after the cry for "more food" has been forgotten. We are whole-hearted, whole-souled folks in this section of Virginia, giving food to the hungry, whether they be clad in rags or silk. There is one thing we demand, however, in giving, namely, selecting the recipients of our gifts. We were deprived of this great pleasure in giving along the live stock line since we have had the great slump put over on us, the results of which mean fewer live stock of all kinds in this section. We are feeding less live stock than we have fed in years and years. While we firmly believe practically all live stock will rise to prices previous to the slump, particularly if other commodities remain high, we, like others in this section, prefer remaining on the safe side till the situation is slightly clearer.

As scarce as labor is in this section, it can be gotten for some price, though that price will not leave the farmer a profit in many branches of agriculture. This being the case, we will be compelled to cut down many of our crops to just what we can handle ourselves. Our corn, for instance, will not justify the wages we would have to pay. Consequently we will only plant what we can cultivate and harvest without hire. That farm products will remain high for years to come there is no question in my mind. Sudden drops in farm products such as we have experienced recently, while trying at the time, only mean a still higher boost eventually. Such slumps decrease production rapidly, the reaction of which is somewhat slower but just as certain. Scarcity of anything will create demand, which in turn boosts prices. Farmers in general are fast getting wise to the fact that it don't pay to produce food just to be producing it, with no profits added. When a thing fails to pay them a profit, they are going to leave it off, thus boosting prices of farm products up a little higher every time they slump.

A. J. L., Albion, W. Va.—We are situated several miles from a good market, though there is a fairly good one for most farm products at the coal mines situated from ten to twenty miles away. It is a difficult matter to get feeds for stock from the depot, which necessitates a haul in wagons over a ten-mile stretch of road that is not of the best, so we try to grow as much of our feed as we can on the farm. Eggs, fruits and sorghum molasses are ready sale, and eggs and molasses are not very heavy to get to market compared with their value. We produced some of these for sale last year, and we plan to produce more next year compared with our other products.

The sorghum cane, if well cultivated, will yield from $100 to $150 worth of syrup per acre, and besides this it yields a heavy crop of seed, valuable as a poultry feed, and also yields a heavy crop of blades that are valuable as a rough feed for sheep, cattle and horses. We have a flock of twenty-four sheep, and plan to grow some lambs for market.

Heretofore we have depended on others to market our farm products, but we think of arranging our cultivated crops so as to take time to do our own marketing. We can hardly expect prices to continue as good as they have been, and will not depend on hired help, but will only undertake to cultivate what we can do with the help of the other members of the family.

Mrs. C. S. F., Jeffersontown, Ky.—We have two tenants engaged for the coming year. Both men have families, and we furnish each a house, garden, cow and cow feed. They share in the crops they raise, but any other work they do on the farm they receive straight wages of $1.50 per day, boarding themselves. Oats is the only crop the men will grow together. Other crops, consisting of corn and tobacco, they will grow separate. We furnish ground, team, tools and seed. They do the work, and receive one-half of the tobacco, two-thirds of the oats and two-thirds of the corn. Besides the crops, we have twelve acres of meadows in which the tenants have no interest, also our boy plans to raise about three acres of onions and potatoes, and we intend to have about an acre in garden. We have a team of mules, a team of work mares, an extra driving horse, eight head of cattle and seventeen head of hogs, five of them brood sows. We expect to profit quite a bit from pigs and calves, as all the cows are due to freshen in the spring and one litter of pigs is already here.

We do not believe that farm produce will ever fall to either pre-war production or price, but we do believe after a time—after the world has gotten on its feet, so to speak—that real estate and farm produce will come to a slow decline in price. In the war that has just passed, the world has come to consider the farmer in a new light, and we believe that he who is in a position to stem the tide just now is the one who has a great reward in store for him. Uncertain conditions are not always promising, but to us the future looks bright.

Mrs. E. M. A., Ashville, N. Y.—Our plans for next year are more definite than usual at this early date. A promising looking wheat field should, if it does well, furnish our own flour and seed, and isn't intended for anything else. Of course, no other crops are in, but we hope to raise a supply of oats and corn for our own stock, plenty of hay, some roots, and a garden which will furnish vegetables for our table. The stock will consist of one to two cows, from which we will have our own milk, butter, cream, buttermilk, etc.; a team to do the farm work, a small flock of hens to supply our own table with eggs and meat, and all other stock kept will be entirely optional—a pig for home use, and a breeding sow, if they come cheap enough; a few sheep, on the same condition, but nothing otherwise.

The labor problem is simple. Our own work will be cut so short that a part of our time will be free, and it will be utilized working for others.

Perhaps these may sound like selfish plans, but with "all the world beside" lined up against the farmer, the constant and systematic persecution to which he is subjected leaves no other course open to him. If things continue in the direction they are going now, we shall work out exclusively in 1921, and raise nothing but a garden.

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Our Agricultural Service Bureau can help you to select the fertilizers best suited to your crops and your own farm conditions. This Bureau has made fertilizer tests in many states. It is under the personal charge of Dr. H. J. Wheeler, formerly Director of the Rhode Island Agricultural Experiment Station. Write for information. The service is free.

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THE PRACTICAL FARMER P·I·O CLUB

THE MAGIC WORD:
OR LADDIE AND POLLY IN THE COUNTRY

Written especially for this paper by Uncle George, founder of the P. I. O. Club in The Practical Farmer

CHAPTER XLII

"Jimminy crickets! This is certainly a fine sled," said Laddie to himself as he went speeding down the hill where a number of boys and girls were coasting. Every trip down he went the farthest, much to the envy of several other boys who had also received new sleds for Christmas. All morning both Polly and Laddie had been skating with the new skates they had received for Christmas. Indeed, they had thought last Christmas that it would be impossible to have more things or a better time, but this year far surpassed last. They were really and truly grandchildren now, and while Mr. and Mrs. Robinson had always treated them as their own children, they felt as if they must do something special this year to celebrate the finding of their daughter's children. To try to tell all they did would be a long story in itself, and even to tell what they gave as presents would be more than you could remember. Everybody on the farm had the merriest Christmas possible, and the wishes for a happy New Year were multiplied many times.

One day during the Christmas holidays, when everybody was home from school having a good time, Laddie met Soapy Clockworthy on the skating pond, and said to him: "Hey, Soapy, do you want to make some money?"

"Betcha life I do," replied Soapy. "I'd like to buy some things like you got for Christmas."

"Tell you how we can do it," confided Laddie as he drew Soapy to one side. "Silas is making lots of money trapping fur animals, and I heard him say if he could only catch some foxes he would be rich, because their furs are worth a lot of money this year."

"That's right," agreed Soapy. "There are lots of foxes around here, but they are too wise to go into a trap."

"Yes, but I can talk to them, and I will fool them so we can catch them," said Laddie.

"Talk to them!" exclaimed Soapy. "Whatcha trying to tell me?"

"Yes, I can talk to any animal living, because I know the Magic Word," asserted Laddie. "All you have to do is whisper it so the animal can hear you, and then you can tell it anything you want and it can talk to you. I know I can do it, because I have done it many times. I never tried to work any tricks on animals before, but I don't see why we can't do it just this one time. Foxes are not much good anyhow, as far as I can see. If a few do get caught they won't be missed near as much as my father misses the chickens and geese which they take."

"I believe what you say about foxes stealing chickens," answered Soapy, "but I have my doubts about you having any Magic Word so you can talk to animals."

"Well, I'll show you," replied Laddie, "when we go to the traps and find a fox caught in each one. We want to set as many as we can, because I want to send as many as possible into the traps the first night. I am afraid I couldn't fool them two nights."

"Well, my father was born in Missouri, and you have to 'show me'," said Soapy as he and Laddie parted for their respective homes that afternoon as it was growing dusk.

Laddie could not help thinking as he walked up the lane, and nearly all the time he was eating his supper, what a wonderful idea for making money had struck him. He had never tried before to take advantage of his Magic Word, but he could see now how he could use it often to his advantage. He was very tired this particular night, and went up to bed early. It was not long after his head struck the pillow before he was sound asleep. Suddenly he sat straight up in bed with a start as if somebody had called him. "What is it?" he asked.

"I am the fairy which gave you the Magic Word when you were in the police station," replied the light, feathery image which was sitting on his bed.

"Yes, I remember you well," answered Laddie. "What can I do for you?"

"Nothing more," said the fairy. You have had the Magic Word a long time now, and have used it a lot, always with good success. Yesterday I heard you planning how to use it to destroy some of my friends—the foxes—and I have come to tell you that you can't use it any more."

"Please, oh, please, don't say that," sobbed Laddie. "I won't trap any foxes."

"It is too late now to be sorry," replied the fairy, "because I have already changed the Magic Word. Not an animal, tree, bush or the smallest insect will now answer the word you know. When the holder of a Magic Word once breaks faith with us we never admit him again to our great secret. I am going now. Good-bye."

"Wait! Wait!" pleaded Laddie as the big tears came streaming down his cheeks and he cried as if his heart would break.

Mother and Father Robinson in the room below came running up to him, and called as they came, "What is the matter?"

"I had a very bad dream," sobbed Laddie.

"Guess you ate too much of that mince pie for your supper," suggested his father.

"He only had a quarter of one," corrected his mother, who did not like to think of her pies producing such bad effects. "Maybe it was something else he ate."

"No matter what it was, I am all right now," said Laddie as his mother bent over and kissed him. "You can go downstairs again and let me finish my sleep out."

"That boy has the right stuff in him," said Mr. Robinson to his good wife as they went to their room again. "It seems to me we will hear something good from him some day after I send him to college."

It was a long time again before Laddie could get to sleep. He kept thinking and thinking about how he lost the Magic Word, and could blame nobody but himself. He knew now that he must get along as best he could to learn nature's secrets. Before he finally got to sleep he resolved never to try again to take advantage of dumb animals, to study hard at school and some time be a great scientist who knew more about nature than any other living man.

THE END

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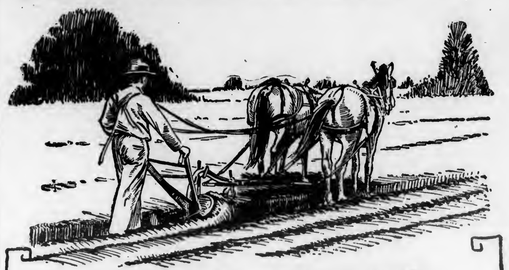

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

FEBRUARY 1.—What flower garden is complete without its roses? Tell us what treatment you have found gives the most blooms, and mention some good varieties, not forgetting the climbers, which can be bought for a new garden.

FEBRUARY 15.—Several of our contributors have expressed a desire that we have a discussion on "Training Children in the Home." Tell us your experience along these lines. There is a mental, moral and physical side to this question, so write about any or all.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Things to Make in the Spare Moments

Mrs. O. J., Rio, La.—I read a few days ago that we are facing a cotton famine. This decided me, as soon as the holidays were over, to go over a barrel of rags and cast-off clothing.

From the backs of house dresses I will make some neat kitchen aprons. Two or three old plain skirts will make comfortable petticoats when the frayed edges are trimmed off and ruffles of sateen put on. From the better portions of an old linen tablecloth I will get several dollies. I will hem them on the machine, and finish with narrow crochet edges. The ends of towels will make nice, soft wash rags. The ends of bed sheets make useful "kitchen cloths" to wrap bread, cover pies, etc. I will tear a few strips of soft linen and cotton and roll for bandages. One never knows when they may be needed. A pair of ragged blankets can be tacked closely between covers made of flour sacks for a comforter. Pieces fit for nothing else will be torn into rug rags. I have a fat bag of scraps, trimmings and braids left from the family sewing, and some remnants bought just because they were pretty and cheap. These I will bring out, and plan and cut and sew till they are made into little garments, serviceable as well as pretty. I may slip off to the store and buy more remnants just for the love of making wee clothes. When done I will pack them nicely and send to the nearest orphanage or Red Cross station to be distributed among the needy.

Mrs. P. C. H., Cornplanter, Pa.—After Christmas work, may this year be made both pleasant and profitable by making either crocheted or braided rugs. I was visiting a friend the other day, and found the rooms so cozy, with a rug every place one would care to use one; and as carpet warp is so high now, one can leave that out. I resolved to try it, and already have a light blue one in process of crochet. The stitch is plain, no thread over, and widens to lay flat; or if oval ones are wanted, start with a straight chain, and widen as for round ones, or at ends or sides, making it octagonal in shape.

The braided rugs give a good chance to use heavy material, and are quite as pretty; and if you want to know their value in dollars and cents, ask the price in a department store, but better take it sitting, as the price might floor you.

Look over your colors, and arrange a color scheme, letting one color follow through the rug if possible. Braid three strands flat and sew together flat on back, baseball stitch, with very strong thread.

Miss I. E. B., Franklinville, N. Y.—Chair cushions, though considered an old-fashioned "fad," we find indispensable in our home, for one of us is a semi-invalid, and father and mother, now in their sixties, think a cushion in a rocking-chair rests them wonderfully when tired.

Our cushions are of feather ticking, filled with hens' feathers, with the outside covers attractively made of worsteds, sateens and ginghams, usually the last two, as they are washable. I am making a cover now for the cushion of our large rocker. It is of golden brown sateen, with a bouquet of red roses, buds and green leaves cut out of sateen and sewed on the top in applique fashion, and around this is a motto worked with gold colored san silk.

I made a very pretty one which was bought by the W. C. T. U. for an invalid lady. It was made octagon shape, of dark red sateen, with a one-inch strip of dark green like a frame around the edge of the top, and a vine of dark blue morning glories with their green leaves appliqued in a semicircle on one side of the top, partly enclosing these words of Scripture, "Seek ye first the kingdom of God and His righteousness," outlined in gold colored san silk.

I make rugs out of the best parts of old, worn-out coats, which everyone thinks are pretty. I cut animals, birds, etc., out of different colored cloth, and applique them on a background of black cloth sewed fast to canvas. I then trim the edges with rows of black and gray scallops. The result is a durable, pretty rug.

A. E. D., Williamsport, Md.—Now that Christmas is over and we want to make something for ourselves, let me suggest some things that I have found practical.

A biscuit cushion is very pretty and economical, for many bits of silk and velvet may be used that would otherwise be useless. For the bottom of the biscuits cut a pattern of cardboard 2½ inches square; then any old material can be used for this foundation. The cardboard pattern for top should be 3 inches square. Lay a small box plait in center of three sides of the top on the foundation. Put a small batch of cotton in center, and close the remaining side. One hundred biscuits will be necessary to make a fair-sized cushion. Arrange them with colors blending and well mixed. Sew together on a foundation. For stuffing, use shredded paper, hair, cotton or feathers.

A sewing-bag is another useful article. Cut a circular piece of flowered cretonne 18 inches in diameter; also cut two pieces of same size of sateen to match. Next place a circular piece of cardboard 5 inches in diameter between cretonne and one piece of sateen. Place other piece of sateen over this, and stitch all around the cardboard. Stitch cretonne and piece of sateen next to it together around the edge, with white lawn bias binding, and finish the other piece of sateen like this. Stitch from edge of cardboard to edge of material at equal distance, making eight compartments. In the center of each compartment sew a small ivory ring to the last piece of sateen. Have 2¼ yards of 1-inch satin ribbon to match. Cut four 18-inch lengths. Sew them to rings, and tie all together in the center with a bow. You will find this handy to hang on your sewing machine.

Mrs. D. E. L., Norwood, N. C.—A number of useful and attractive articles can be made from discarded clothing and hose that collect so rapidly these days. One day I found in the rag bag an old white shirt, a blue percale dress and a red one, which I tore into strips one-quarter of an inch wide, sewed the ends together, wound into three balls, and crocheted a square case for a chair cushion. I used the solid filet pattern, and made one-third of the top red, one-third white and one-third blue. I did the same for the bottom, then placed the top on the bottom, the blue ends together, and crocheted three edges together. On the side left open to receive the pillow I sewed dress clasps.

My sister is crocheting one of old silk hose. Of course, the hose had to be cut, instead of torn into strips.

If you have never tried it you will be surprised what a soft, smooth mat or rug can be made from old stockings. Cut the strips one-half inch wide, or wider if desired. Take three strips the same color and plait a few yards. Then, with a needle and coarse thread, begin the center of the rug by sewing the plaits together, shaping it round, oval or square. Add a few strips at a time, plait, and pin at the end to keep it from unplaiting while you sew it to the rug. Keep the rug made up as you go, then you can see how fast it grows and just where you want to put in another color. The center of the rug can be made of one color, and a different color used for the border, or different colored strips can be used from the first and produce a spotted rug. I have a serviceable rug plaited from blue and yellow overalls. Work of this kind is nice to pick up on dark, dreary days, as it is not hard on the eyes.

Mrs. W. J. L., Canastota, N. Y.—After Christmas I plan to make my undergarments for the year's supply, as nightgowns, corset covers, skirts, etc. For one corset cover I am crocheting a yoke of Palm Beach lace, or it is sometimes called "monkeyface" or "edelweise." I originated the yoke, and have never seen it published. Let me say if you spend time on making such work, select a pattern that is durable as well as pretty. Filet crochet and many other beautiful patterns requiring so much time do not wear well. For night gowns and corset covers I use a very good quality of embroidery silk in blue or pink, and briar-stitch the neck and sleeves or whatever part needs trimming. I like these better than the more elaborately trimmed ones.

Each month I expect to make one or two pretty pieces of needlework for 1920 Christmas gifts. The January work will be a handkerchief with fine tatted edging.

Ladies' Styles and Agriculture in Borneo

J. G. B. SMITH

The Borneo ladies are affected more by the style of ears than of dress, according to the parish letter received from Rev. J. M. Hoover, Sibu, Sarawak, Borneo. Dr. Hoover, who went from Chambersburg, Pa., as a missionary, lives at Sarawak, an independent state of Northwest Borneo, Malaysia. The town is governed by an English "raja," and the mission is on the Rejang river, near the town of Sibu.

Dr. Hoover, in his letter regarding the centenary campaign to the members and friends of the Methodist Episcopal Church, describes the trimming of the ears of a Dyak's daughter, which was performed without anesthetics.

"I met a Chinaman who said he was going to a Dyak's house to cut the ears of the Dyak's daughter," writes Dr. Hoover. "That seemed like something doing, so I asked to go along. When we arrived at the house I found that styles were changed and the lady was having her ear lobes cut off. The Chinaman went to work with an old razor, then sewed the two ends together with a rusty needle and a piece of white thread. I saw her some time after, and the Chinaman had made a very good job of it."

Speaking of eating in a Dyak's home, Dr. Hoover says:

"We stayed for dinner at the chief's family. We all gathered around a big pot of boiled rice, which must have been boiled the day before, because it was cold and hard. Each person reached in and broke off a piece. Beside the pot was another vessel containing wild pork, also cold and 'high smelling.' Each one reached in and took a hunk in his fingers. Supper was the same, only the rice was harder and the pork 'higher.'

Dyaks eat monkeys, snakes, ourang-outangs, grubs, worms, bats, rats, and dead chickens which die of disease or are drowned. The story is told of a rajah who was presented by the Dyaks with a big ourang-outang they had killed. It had been dead so long that the hair was falling off in big patches. The rajah politely refused their gift. "All right, we will take him home and eat him," they said.

It was the biggest specimen ever killed in Sarawak. He had a reach of over 7 feet, and weighed over 175 pounds. They usually sell the hands to Chinese doctors, who make what is called "ourrangatogen," for they dry the hands and grind them up for a nerve tonic. The gall is used for eye wash. The head is hung among the human heads, and counts as one.

Agricultural pursuits are not dignified with the Dyaks. Dr. Hoover declares that, while the natives are great warriors and fought in the European war, they hate work, especially in agriculture. He writes they make no gardens, and raise no vegetables except gourds. These are made into vessels for carrying water. Roots and leaves are gathered in the jungle and are eaten. The young shoots of bracken are not bad as a vegetable, but are not especially succulent. Sago grows wild, and many times saves a Dyak from starvation. It grows like the palm tree, 20 or 30 feet tall and 15 or more inches in diameter. The whole trunk is of fiber or cords which are covered with a white substance. The tree is broken and torn into shreds with a heckle. The fiber is put into a boat, and, while somebody stamps it,

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water is poured on, washing off the white coating, which settles to the bottom like wet flour. It is ready to be boiled and eaten. No one knows what a blessing it is to have sago made up into little balls, as it is bought in the market, till he tries to eat the flour boiled to a paste. And of all the sticky things that ever stuck, and of all the stretchy things that ever stretched, sago takes the lead. My advice is: Don't begin to eat sago unless you can eat all that is in the pot, or you will have trouble separating yourself from it.

In growing rice the Dyak selects a piece of old jungle and cuts down the big trees only, for most of the small ones are broken off by the large ones falling on them. He must have a new piece of jungle each year, for grass and weeds grow on his old farm by the second year, and he can do nothing with a piece of land that needs cultivation. At the sight of a hoe the Dyak would drop dead. He knows nothing of such instruments of torture. After the jungle has been cut down, he waits a season till it is dry; then he burns it. If the rains set in, he does not get a burn; then he does not get a crop. At the best, only the leaves and branches burn, and all the big logs and standing trees remain. The first time you see a Dyak farm, you must be told what it is. After the burning, several old men and women go over the ground with long sticks, punching shallow holes, into which are dropped a few grains of rice. The farming is now done; all that remains is to harvest the crop. There are many things that interfere with a Dyak's farming. If anybody dies in his long house (and in such big houses people often die),

(Continued on page 19)

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9510.—Ladies' house dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. Dotted percale makes this neat house frock with a plait at each side of the front.

9488.—Infants' yoke dress. An inverted plait is stitched under each arm to give plenty of fullness. Cut in one size.

9486.—Girls' dress. Cut in sizes 6 to 14 years. Appropriate for school is this wash dress of gingham with trimmings of white piqué.

9512.—Ladies' and misses' two-piece skirt. Cut in sizes 16 and 18 years, and 26, 28, 30 and 32 inches waist measure. The puffed-out effect is obtained in a simple way by applying pockets.

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9511.—Ladies' four-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. Inverted plaits at the sides give ample fulness.

9500.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. A novel apron panel is attractive on this serge frock.

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Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

SUNNY SLOPES

By Ethel Hueston

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Author of Prudence of the Parsonage, etc.

CHAPTER V—Continued

"I heard nothing further for two weeks. Then Mr. Nesbitt was called East on business, and said I might go home if I liked. Imagine my ecstasy! I found the family, as well as all Methodists in general, quite uplifted over the strange case of Kirke Connor. From a semi-satanic he had suddenly evoluted into a regular pillar, as became the son of his saintly mother and his orthodox father. He attended church, he sang in the choir, he went to Sunday school, he was prominent at prayer meeting. Everyone was full of pious satisfaction, and called him 'dear old Kirke,' and gave him the glad hand, and invited him to help at ice cream socials. No one could explain it. They thought he was a Mount Mark edition of Twice Born Men in the flesh.

So the first afternoon when he drove around with his speedy little brown horse and his rubber-tired buggy and asked me to go for a drive, father smiled, and Aunt Grace demurred not. Maybe I could give him a little more light. I watched him pretty closely the first mile or so. He had nothing to say until we were a mile out of town. He is a good-looking fellow, Carol—you remember, of course, because you never forget the boys, especially the good-looking ones. His eyes were clear and slightly humorous, as if he knew a host of funny things if he only chose to tell. Finally, in answer to my reproachful gaze, he said:

"'Well, I didn't have anything to say about it, did I? I did not ask to be born a minister's son. It was foreordained, and now I've got to live up to it in self-defense. There may be forgiveness for other erring ones, but I tell you our crowd is spotted.'

"I had nothing to say.

"'Well, you might at least say, "Good for you, my boy. Here's luck!"' he complained.

"I was still silent.

"'It is good business, too,' he continued belligerently. 'I am selling lots of furniture. I have burned the black-and-white cards. I have broken the ice-cold bottles. I have shunned the gilded youths with mellow voices. I go to church. I sell furniture. I sleuth Matters.'

"'You what?'

"'I am trailing Matters—turn about. Where he goeth, I goeth. Where he lodgeth, I lodgeth. His knowledge is my knowledge, and his tricks my salvation.'

"'You make me sick, Kirke. Why don't you talk sense?'

"'He is crooked, Connie, and everybody knows it. But it is no cinch catching him at it. Smithson is going to be elected, and Matters knows it. But the only way I can keep out of that trial is to get something on Matters. So whenever he is out, I am out on the same road. He is going toward New London this afternoon, and so are we. I have got just five more days, and you must be a good little scout and go driving with me so he won't catch on that I am sleuthing him. He will think I am just beaning you around in the approved Mount Mark style.'

"Sure enough, after a while we came across Matters talking to a couple of farmers on the cross-roads, and Kirke and I stopped a quarter of a mile farther down and ate sandwiches and told stories, and when Matters passed us a little later he could have sworn we were there just for our joy in each other's company. But we did not learn anything.

"The next day we were out again, with no better luck. But the third day, about 4 in the afternoon, Kirke called me on the telephone. There was subtle excitement in his voice.

"'Come for a drive, Connie?' he asked. Common words, but there was a world of hidden invitation, of secret lure, in his voice for me.

"'Yes, gladly,' I said. Father did not nod approvingly, and Aunt Grace did not smile this time. Three days in succession was a little too warm even for a newly made pillar; but they said nothing, and Kirke and I set out.

"'He raided Jack Mott's last night, and has about three hundred bottles to smash this afternoon. The old fellow is pretty fond of the ice-cold bottles himself, and it is common report that he raids just often enough to keep himself supplied. So I think I'll keep an eye on him today. He started half an hour ago, south road, and he has Gus Waldron with him—his boon companion and the most notoriously ardent devotee of the bottles in all dear, dry Mount Mark. Lovely day for a drive, isn't it?'

"'Yes, lovely.' I was very happy. I felt like a princess of old, riding off into danger, and I felt very warm and friendly toward Kirke. Remember that he is very good-looking and just bad enough, in spite of his new pillarhood, to be spell-binding, and—it was lots of fun. Kirke grabbed my hand and squeezed it chummily, and I smiled at him.

"'You are a glorious girl,' he said.

"I suppose I should have reminded him and myself that he was a semi-satanic, but I did not. I laughed, and rubbed the back of his hand softly with the tips of my nice pink finger nails, and laughed again.

"Then there came a light wagon—Matters and Waldron going home, and we realized we had been loitering on the job. Kirke shook his head impatiently.

"'You distracted me,' he said. 'I forgot my reputation's salvation in the smile of your eye.'

"But we drove on to look the field over. Less than half a mile down the road we came to a low creek with rocky, rugged banks. The banke were splashed and splattered with bits of glass, and over the glass and over the rocks ran thin trickling streams of a pale brown liquid that had a perfectly sickening odor. I sniffed disgustedly as we walked over to reconnoiter.

"'I guess he made good, all right,' said Kirke in a disappointed voice, inspecting the glass-splattered banks of the creek. Then he leaped across, and walked lightly up the bank on the opposite side. Stooping down, he lifted an unbroken bottle, and waved it at me, laughing.

"'They missed one. Never a crack in it, and still cold.' He looked at it curiously, affectionately, then with resignation. 'I am a minister's son,' he reminded himself sternly. He lifted the bottle above his head, and with his eye selected a nice rough rock half way down the bank. 'Watch the bubbles,' he called to me.

"'Hey, mister,' interposed a voice, 'gimme half a dollar an' I'll show you a whole pile of 'em that ain't broke.'

"Slowly we rallied from our stupefaction as we gazed at the slim, brown, barefooted lad of the farm who was proudly brandishing a forbidden cigarette of corn silks.

"'A whole pile of 'em! On the square?' asked Kirke with glittering eyes.

"'Yes, sir. A couple o' fellows come out in a light wagon a while ago, an' had a lot of bottles in boxes. First they throwed one on the rocks, an' then they throwed one up in the tall grass, one up an' one down.

There's a whole pile of 'em that ain't broke at all. An' the little, dark fellow says: "A good job, Gus. We'll be Johnny-on-the-spot as soon as it gets dark."'

"Kirke was standing over him, his eyes bright, his hands clenched. 'On the level?' he whispered.

"'Sure, but gimme the half first.' Kirke passed out a silver dollar without a word, and the boy snatched it from him, giggling to himself with rapture.

"'Right up there, mister, in that pile of weeds.'

"Kirke took my hand, and we scrambled up the bank, pulling back the tall grass—no need to stoop and look. Bottle after bottle, bottle after bottle, lay there snugly and securely, waiting for the sheriff and his friend to rescue them after dark.

"The lad had already disappeared, smoking his corn silks rapturously, his dollar snug in the palm of his hand. And Kirke and I, without a word, began patiently carrying the bottles to the buggy. Again and again we returned to the clump of weeds, counting the bottles as we carried them out—a hundred and fifty of them, even.

"Then we got into the buggy, feet outside, for the bed of the buggy was filled and piled high, covered with the robe to discourage prying eyes, and turned the little brown mare toward town.

"'Connie, would you seriously object to kissing me just once? I feel the need of it this minute—moral stimulus, you know.'

"'Ministers' daughters have to be very, very careful,' I told him in an even voice.

"We were both silent then as we drove into town. When he pulled up in front of the house, he looked me straight in the face—and he uses his eyes effectively.

"'You are a darling,' he said.

"I said 'Thanks,' and went into the house.

"He told me next morning what happened that evening. Of course, he was there to witness Matters' discomfiture. He did not put in appearance until the sheriff and his friend were climbing anxiously and sadly into the light wagon to return home empty-handed. Then he sauntered from behind a hedge, and lifted his hat in his usual debonair manner.

"'By the way, Mr. Sheriff,' he began in a quiet, ingratiating voice, 'I hope I am not to be called as a witness in that bootlegging case.'

"Matters snarled at him. 'Pooh,' he said angrily, 'you can't blackmail me like that. You can't prove anything on me. I reckon the people around here will take the word of the sheriff of their county against the booze-fightin' son of a Methodist preacher.'

"Kirke waved his hand airily. 'Far be it from me to enter into any defense of my father's son. But a hundred and fifty bottles are pretty good evidence. And, speaking of witnesses, I have a hunch that the people of this county will fall pretty hard for anything that comes from the lips of the baby daughter of the district superintendent of the Methodist Church.'

"Matters hunched forward in his seat. 'Connie Starr!' he said in a hollow voice.

"Kirke swished the weeds with his cane—he has all those graceful affectations.

"Matters swallowed a few times. 'Old Man Starr is too smart a man to get his family mixed up in politics,' he finally brought out.

"'Baby Con is of age, I think,' said Kirke lightly. 'And she is very advanced, you know, something of a reformer; has all kinds of emancipated notions.'

"Matters whipped up and disappeared, and Kirke went to prayer meeting. Aunt Grace saw him; I wasn't there.

"The next day, I met Matters on the street. Rather, he met me.

"'Miss Connie,' he said in a friendly, inviting voice, 'you know there are a lot of things in politics that girls can't get to the bottom of. You know my record. I've been a good Methodist since before you were born. Sure, you wouldn't go on the witness stand on circumstantial evidence to make trouble for a good Methodist, would you?'

"I looked at him with wide and childish eyes. 'Of course not, Mr. Matters,' I said quickly. He brightened visibly. 'But if I am called on a witness stand I have to tell what I have seen and heard, haven't I, whatever it is?' I asked this very innocently, as one seeking information only.

"'Your father wouldn't let a young girl like you get mixed up in any dirty county scandal,' he protested.

"'If I was—what do you call it—subpœnaed—is that the word?' He forgot that I was working in a lawyer's office. 'If I was subpœnaed as a witness, could father help himself?'

"Mr. Matters went forlornly on his way, and that night Kirke came around to say that the sheriff had informed him casually that he thought his services would not be needed on that bootlegging case—they had plenty of other witnesses—and out of regard for the family, etc., etc.

"Kirke smiled at him. 'Thank you very much. And, Matters, I have a hundred and fifty nice cold bottles in the basement. If you get too warm some summer evening, come around and I'll help you cool off.'

"Matters thanked him incoherently and went away.

"That day Kirke and I had a confidential conversation. 'Connie Starr, I believe I am half a preacher right now. You marry me, and I will study for the ministry.'

"'Kirke Connor,' I said, 'if any fraction of you is a minister, it isn't on speaking terms with the rest of you, that's certain. And I wouldn't marry you if you were a whole conference. And I don't want to marry a preacher, of all people. And, anyhow, I am not going to get married at all.'

"At breakfast the next morning father said: 'I believe Kirke Connor is headed straight, for good and all. Now, if some nice girl could just marry him he would be safe enough.'

"Aunt Grace looked at him warningly. 'But, of course, no nice girl could do it yet,' she interposed quickly. 'It wouldn't be safe. He can't marry until he is sure of himself.'

"'Oh, I don't know,' I said thoughtfully. 'Provided the girl were clever as well as nice, she could handle Kirke easily. Now, I may not be the nicest girl in the world, but no one can deny that I am clever.'

"Father swallowed helplessly. Then he rallied. 'By the way, Connie, won't you come down to Burlington with me for a couple of days? I have a lot of work to do there, and we can have a nice little honeymoon all by ourselves. What do you say?'

"'Oh, thank you, father, that is lovely. Let's go on the noon train, shall we? I can be ready.'

"'All right, just fine.' He flashed a triumphant glance at Aunt Grace, and she dimpled her approval.

"'Now, don't tell anyone we are going, father,' I cautioned him. 'I want to surprise Kirke Connor. He is going to Burlington on that train himself, and it will be such a joke on him to find us there ready to be entertained. He is to be there several days, so he can amuse me while you are busy. Isn't it lovely? He really needs a little boosting now, and it is our duty, and—will you press my suit, auntie? I must fly, or I won't be ready.'

"Aunt Grace looked reproachfully at father, and father looked despairingly at Aunt Grace. But we had a splendid time in Burlington, the three of us, for father never did one second's work all the time, he was so deathly afraid to leave me alone with Kirke.

"Isn't it lots of fun to be alive, Carol? So many thrilling and interesting and happy things come up every day! I love to dig in and work hard, and how I love to drop my work at five thirty and run home and doll up, and play, and flirt—just nice, harmless flirting—and sing and talk! Really, it is a darling little old world, isn't it?

"Oh, and by the way, Carol, when you want a divorce, just write me about it. Mr. Nesbit and I specialize on divorces, and I can do the whole thing myself and save you lots of trouble. Just tell me when, and I will furnish your motive.

"Lovingly as always,

"Connie."

(To be continued)

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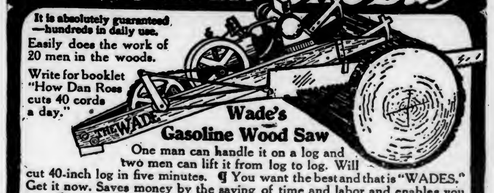

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Passing Dairy Notes

E. L. VINCENT

So far we have no record of the milking machine jumping up and kicking the cows. That makes one place where the machine beats some hired men all hollow.

Single out the best cows; breed them to the finest sire in town. This is the road to the best in dairying.

Stop spending your strength urging folks to buy your butter, and put more stress on making the butter better. Then you won't have to argue. Your butter will sell itself.

The brush and currycomb you use on the cows need cleaning once in a while. They get all gummed up after a while.

Never touch a comb or brush that has been used on the back of a cow with mange or any other skin disease to the body of another animal. You see why.

Clean mangers are a pretty good sign of a good appetite. Try feeding just a bit more, but the moment you find leavings, be sure that you have gone a trifle beyond the limit of perfect assimilation.

Watch for the first varmint that seems to be headed toward the calves, and put a stop to him by the use of some good insect powder. We have no grain to feed such pests these hard times.

Nine times out of ten the man who is sure he is running behind in dairying does not know whether he is or not—no accounts, no careful reckoning up of the cost of production. What shall the man who is in that fix do? Sell out? Not a bit of it! Turn over a new leaf. Keep account of everything that enters into the cost of production. Improve methods of marketing, and see if you are not really making good on the dairy end of your farming operations. The chances are you will think more of the cows, and if you do you will take better care of them and they will do better for you.

New York.

Pennsylvania College Stock Good Winners

Live stock exhibited by the Pennsylvania State College at the International Live Stock Show at Chicago this year won nine first, seventeen second, twelve third and four fourth prizes, as well as being in the money in several other classes and receiving a total of $1141 in prize money. With fat cattle Penn State took first place on Galloway steer herd and on Galloway junior yearling; second on polled Shorthorn steer calf, junior yearling Hereford steer, Galloway senior yearling steer, three Aberdeen Angus grade steers get of sire, and second in the special class for Aberdeen Angus grade steers. Also several third, fourth and fifth prizes were won on cattle, amounting in all to $423.

In the swine classes it was second on Duroc Jersey barrow under one year, on pen of three Berkshire barrows under six months, on Chester White barrow under six months, and on Chester White pen of barrows get of one sire. In the Clay Robinson Company special class for hogs exhibited by colleges, the Pennsylvania State College won the championship. On cross-bred barrows weighing between 250 and 350 pounds it was second, winning in all $358 on hogs shown.

College sheep were exhibited in the mutton improvement demonstration. Here Penn State took first place on pen of Southdown-Merino range wethers, Shropshire-Merino ewe lambs, Shropshire-Merino yearling ewes, Shropshire-Merino wethers, on an individual Shropshire-Merino lamb and on Cheviot wether lamb. Second place was obtained in four classes of Lincoln and Shropshire-Merino crosses, on yearling Cheviot wether and on carcass of Southdown grade lamb. A pen of Lincoln cross-bred range and a pen of Leister wether lambs each won third place in its class, as did Shropshire-Merino wethers and the carcass of a Southdown grade lamb, making $330 in prize money.

Nodular Disease in Sheep

During January and February nodular disease of sheep is responsible for the general unhealthy condition of many flocks and also the death of many individual sheep. Nodular disease is very common among sheep at all times of the year, but the encysting of the worm or parasite in the mucous coat of the intestines reaches its maximum these months, says Dr. L. C. Kigin, veterinarian of Purdue University.

Proper feeding and medicinal treatment will prevent a heavy death rate in any flock, providing such feeding and treatment is not postponed too long. I do not wish to infer, said Dr. Kigin, that there is any cure for the disease, as it is impossible, so far as we know now, to dislodge and eliminate the parasite after it has encysted itself into the wall of the intestines. The absorbing surface of the intestines is diminished, as well as the narrowing of the lumen, by the nodules appearing in vast numbers over the surface and extending out from the surface into the lumen of the bowel.

Symptoms of nodular diseases are diarrhoea, emaciation, arched back, stiffness in latter stages of disease, and loss of appetite. A post-mortem will reveal the extent of the infestations of this parasite.

As proper feeding is deemed the most essential factor in combatting the unthrifty condition and destruction of this disease, Claude Harper, assistant in sheep husbandry of Purdue University, suggests the following:

If your ewes are affected with nodular disease, feed them liberally. The ration should be of such a nature as to keep the digestive tract in the best physical condition, as the most harmful effects of this disease come from its interferences with the processes of digestion and absorption of food materials. If there is no other disease present, and your ewes are liberally fed with the proper kinds of feeds, there should be little chance for loss. A 150-pound breeding ewe should have one-half to one pound of oats or a mixture of corn and oats, one-fourth to one-third of a pound of oil meal and three pounds of good clover or alfalfa daily. If you have silage, feed two pounds per ewe per day, and reduce the hay to two pounds per ewe.

After the ewes have dropped their lambs, feed the maximum amounts of concentrates recommended, and increase the hay and silage rations. Ewes so fed will produce good, strong lambs and a well-grown fleece, even though they are affected by nodular disease. If one has a ewe flock badly infested, a crop of lambs can be secured practically free of disease by raising them in a dry lot entirely free from vegetation.

Laxatives and tonics have apparently given good results in many flocks suffering with nodular disease. The laxatives keep the bowels regulated, thus preventing the absorption of toxic material. The following formula has been recommended to many flock owners: Equal parts of sulphate of soda, bicarbonate of soda and chloride of soda. It should be thoroughly mixed and placed before the flock in a self-feeder protected from rains. The above mixture should not be placed before a flock until the flock has enjoyed the privilege of getting all the salt their system demands. It will not be necessary to continue salting after the feeder has been filled and placed at their disposal.

Tonics can be administered with ground feed. Powdered gentian and nux vomica, two ounces of each, will make one dose for thirty sheep. Only give once per day until flock shows improvement.

Now is the time to begin the fight against nodular disease next year. Do not allow infested flocks to graze over pastures during early spring that you intend pasturing next summer and fall.

At the Western Dairy Products Show held in connection with the Pacific International Live Stock Exposition Portland, Ore., last November, a sample of Guernsey milk was awarded first prize. Samples of milk from practically all Pacific coast and mountain states were in competition.

Cutting poor hay and feeding it to a poor cow will make both land and owner poorer. Plow under the poor hay for the land's sake, and kill the poor cow for everybody's sake.

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—Ask him the name of the line of live stock preparations that he has known for the greatest number of years, and he will invariably answer "INTERNATIONAL."

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They are sold by thousands of dealers throughout America. Their popularity proves their efficiency. The line includes the following: International Stock Food Tonic, Hog Tonic, Hog Worm Powder, Animal Dip, Pheno (disinfectant), Colic Medicine, Worm Powder for horses, Heave Powder, Distemper Powder, Gall Salve, Poultry Food Tonic, Louse Killer, Silver Pine Healing Oil and many others.

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A steadily increasing demand for thirty years proclaims them America's standard. Many dealers have successfully sold them for over a quarter of a century. Used and endorsed by the leading farmers, stock raisers and horsemen throughout the United States and Canada.

International Stock Food Co.
MINNEAPOLIS, MINN.

Ladies' Styles and Agriculture in Borneo

(Concluded from page 15)

no work is done for three days. If it is "the dead of the moon," what we call the dark of the moon, nobody works for three days. If on the way to the field a certain bird calls on his left, or a deer crosses his path, he turns back and rests with father that day. If anyone has a bad dream, work is off for the day. There are other signs, omens and tokens that hinder work, so that sometimes a whole season is lost and no rice is raised. Then, again, his crop is at the mercy of the pests. After he has dropped the rice in the holes prepared for it, and stamped on the holes, he says:

"Now, then, drat you, beat the weeds if you can, and if the pigs, the birds, the worms, the deer or the rats get you, remember I have done my part."

The women gather the rice by hand, pulling or cutting off a few heads at a time, carry it home in baskets, thrash it, dry it and store it. They hull it as needed each day. Hulling is hard work. The rice is put into a hole made in a big log, and then pounded with a long, heavy pole—a mortar-and-pestle operation. After harvest, a harvest feast is held. The big part of the feast is the "drunk." Everybody drinks a milky-colored liquor made from rice. I should say it is 80 per cent. alcohol, and the rest dirt and broken rice. When the men get so drunk that they can no longer sit up, the women pour the stuff down their throats, using pieces of bamboo for funnels. The women drink, too, and when everybody is dead drunk, the feast is over. It is a tedious and disgusting affair.

Another "International"

(Concluded from page 3)

breeds. The grand champion bull of the breed was exhibited by a new breeder from Tennessee, Dr. J. C. Huggins, who recently established a herd and secured the best animals available. From this herd was exhibited the bull, Idolmare, that has been the consistent winner at a number of the southern fairs and this year came north to take back the highest honors for his breed. It will be remembered that last year the grand champion Angus bull came from a new exhibitor, C. W. Eckardt, of New York city. The senior and grand champion female also came from a southern herd. This award was placed on Queen Millie of Sundance 3d, exhibited by J. C. Parsons, of Alabama. The number of championship honors of the different breed that went to southern states this year would seem to be a direct index of the general interest in live stock in that undeveloped country.

The exhibit of Galloways, red polled, polled Durham and milking Shorthorns was about up to the usual standard, although these breeds are never represented in as large numbers and by animals of as high quality as the other breeds mentioned.

The show of draft horses was made largely by Clydesdale and Percheron breeders. Most of the Percheron horses exhibited came from the middle western states, while the bulk of the Clydesdales came from the eastern states and Canada. The several times grand champion, Fair Holm Foot Print, exhibited by F. L. Ames, Boston, Mass., was again made grand champion of the show. This Clydesdale stallion has won more grand championships at the International than any other horse ever exhibited in this country. The grand champion female of this breed was awarded to an eastern breeder, being placed on Cragie Sylvia, exhibited by George Cluett, Williamstown, Mass.

The grand championship of the Percheron breed was awarded to G. H. Severn and Son, of Prairie City, Ill., on their aged stallion, Jasmine. The exhibit of Percheron horses was not as large as in the past or as large as the Ohio state fair this last year. This was due to a misunderstanding with reference to the system of judging.

The show of Belgian draft horses was of a high order. The quality of this breed has improved from year to year, so that the Belgian horses that come into the show ring today are entirely different types of draft horses than exhibited ten or fifteen years ago. The grand champion stallion of the breed was shown by Lefebure's and Sons, of Iowa. The grand champion mare of the breed was Salome, exhibited by Charles Irving, also of Iowa.

The show of shire horses was in keeping with the popularity of this breed. The grand champion stallion of this breed was Kirtling Bold Lion, exhibited by Truman Brothers, of Illinois. The grand champion female was Blockinge Starlight, exhibited by Shafenacker and Sons, of Chestnut, Ill.

In the breeding division of the sheep show was found a large array of entries for practically every breed and of a quality that has never been surpassed. The International brings together the best flocks in the country for final rating, and the prizes were generally well distributed in practically all the breeds, indicating that no section of the country has a monopoly on the amount of high-class breeding animals available.

The swine show in the breeding division has never been looked upon with favor by a great many breeders of pure-bred swine. The number of entries and the quality of animals on exhibition are not in keeping with the standard and number exhibited at a number of the state fairs. This is due partly to the season of the year that the show is held, and also the dislike of a number of breeders to exhibit breeding animals at the International Stock Yards. It is more of a fat barrow show, and this feature is being advocated more and more by breeders and the various record associations. It affords opportunity to demonstrate the relative merits of the different breeds by making it a strong barrow show, and as most of the barrows are sold at the close of the show, it is doing away with any danger of taking back to the farm contagious diseases that might prevail in the stock yards.

In the carload division the number of carloads of cattle entered was somewhat larger than last year, while that of hogs and sheep was about the same. The quality of the cattle was up to the usual standard, and brought together a number of high-class car lots of finished cattle. The championship load of fat cattle was exhibited by John Hubley, of Mason City, Ill., who won first place in the yearling class and was later awarded the grand championship on a carload of Angus yearlings. This same lot of cattle last year won the champion in the feeder division. Most of the car lot entries were Herefords and Angus, these two breeds being represented by an equal number of carloads. There were less than a dozen carloads of Shorthorns out of the total of sixty carloads on exhibition. The champion load of cattle was sold at auction to Swift and Company at $45 per hundred. The average for all the 46 carloads sold was $25.45.

The carload lots of fat wethers and lambs was small, and, with the exception of two or three, was not in keeping with the usual standard. The grand champion carload of lambs was Southdowns, exhibited by Hearts Delight Farm, Chasey, N. Y. The champion load of Southdown lambs was sold at auction at $37 per hundred. The average price received for seven carloads of natives and western fat lambs was $22.60, which established a new high average for carloads of sheep exhibited at Chicago.

The grand champion carload of hogs was exhibited by Gus Meyer, of Illinois, with a load of heavy Hampshire swine. Mr. Meyer showed the champion load last year. These sold at $20.50 per hundred, while the average of about twenty loads was $16.99 per hundred. A carload of Berkshire hogs was exhibited by Flintstone Farm, Dalton, Mass. This was the first time that a carload of hogs has ever been exhibited from territory east of Ohio.

Each of the prominent record associations of beef cattle held an association sale during the week. The Polled Hereford Association sale was Tuesday; the Aberdeen Angus Breeders' Association sale was Wednesday afternoon, when about 50 head brought an average of $1696. Top price received was $4600 for an animal purchased by the new Aberdeen Angus firm, Carpenter and Ross, of Mansfield, Ohio. The sale of polled Shorthorns was held Thursday morning, and the sale of Shorthorn cattle Thursday afternoon. The top price at the Shorthorn sale was paid by Ray Hausman, Heron, S. D., for the cow, Lovely of Park Dale 15th, consigned by Carpenter and Ross, Mansfield, Ohio. The average price for Shorthorns was $2331. The sale of Herefords was held Friday afternoon, when an average of a little over $1900 was secured.

During the International week a number of the live stock record associations and other organizations held their annual meetings. These bring together the breeders of the various live stock associations to discuss problems in connection with the breed. Space does not permit giving a detailed account of these meetings, but the reports of the secretaries of the various associations indicate a healthy condition of all of them, and the feeling seems to be that more money should be used to promote the different breeds, especially to encourage the distribution of pure-bred live stock.

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The cows that make the big milk records are well fed and well bred, to be sure. But, above all, they are in the pink of condition. The constant strain of heavy milk production will wear down the vitality of the digestive and genital organs in the best of cows, and the result is such ailments as Abortion, Retained Afterbirth, Barrenness, Scouring, Bunches and Milk Fever. Any of these diseases can be successfully treated and eliminated with KOW-KURE, the great cow medicine. The medicinal properties of this famous remedy act directly on the organs of production and reproduction, putting the cow's system back to normal, healthy action. Feed dealers and druggists sell KOW-KURE; 60c and $1.20 packages. Consider cow-health first, and your dairy will be a leader, and a money-maker. Our free treatise,

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Health Pays!

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RIPPLEY'S Combination Hot water Heater and Steam FeedCookers will boil bbl. water in 20 min. or cook 24 bu. feed in 2 hours. Will heat water in tanks 200 ft. away, by attaching pipes to water jacket; will heat hog houses, poultry brooders, etc. Used by 23 State experiment stations. Saves 35 per cent of feed bill. Ripley Manufacturing Co., Groton, Ill. New York Office, 95 Liberty Street

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24 Herefords, weight 1050 pounds; 33 Herefords, weight 670 pounds; 56 Herefords, weight 760 pounds; 95 Herefords, weight 960 pounds; 86 Short Horns, weight 800 pounds; 27 Short Horns, weight 1256 pounds; 28 Angus, weight 1025 pounds; 40 Angus, weight 740.

Also know of others who will help buy for 50 cents per head commission. These cattle are choice quality, good color and dehorned.

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BIG TYPE Poland China Hogs. Fall pigs, both sex, best blood lines, all cholera immuned. Write your wants. Prices right. Public sale of bred sows and gilts, February 12th, 1920.
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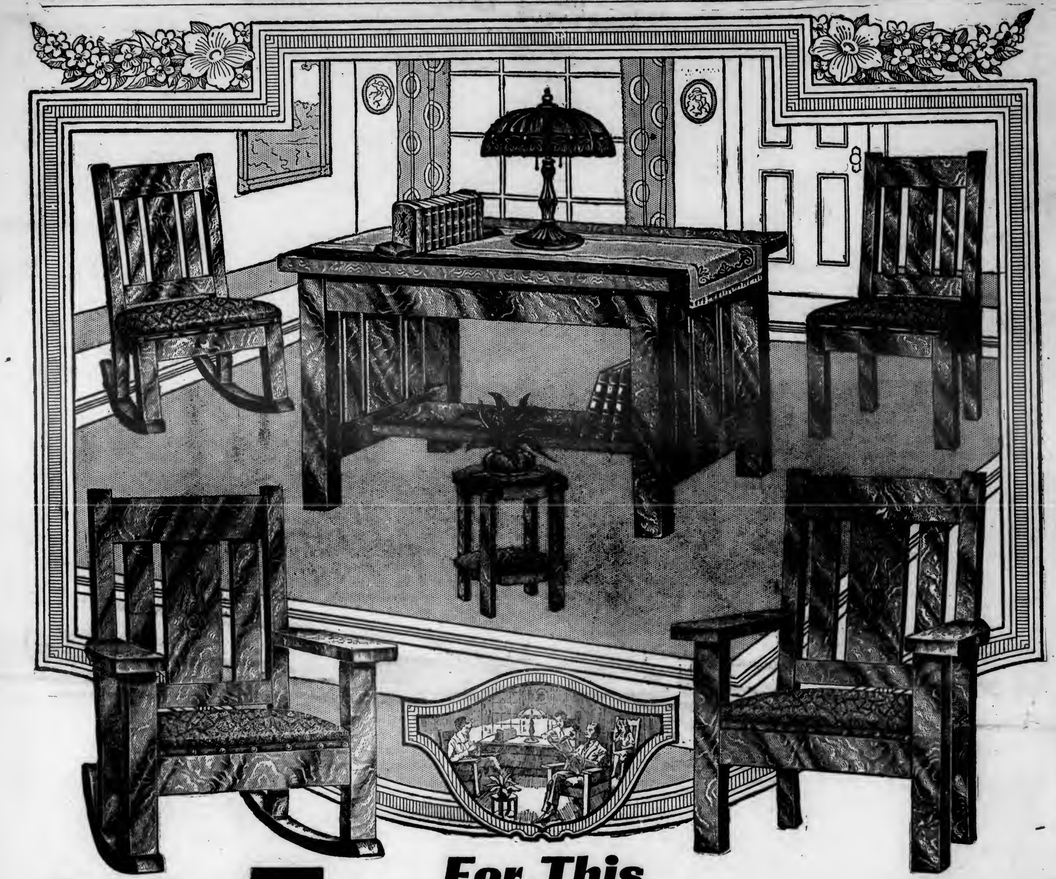

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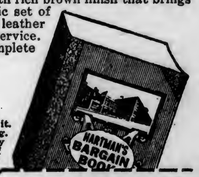

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Our Horticultural Number

The Practical Farmer

PUBLISHED CONTINUOUSLY SINCE 1855

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THE prize winning experience letters from our readers dealing with various phases of fruit growing are in this issue. Each contains a worth while message which will repay careful reading.

PRIZE LETTER

Fruit—Farmers' Heritage

M. G. FEINT

I BELIEVE if I am to live in the country that I simply must have some of the good things that go with country life. Some of these are flowers, a plentiful supply of wholesome garden-grown foods, and, last but not least, lots of fruit the year round.

A start in small fruits costs but little, and should include strawberries, early and late; cherries, currants; raspberries, red and black, and blackberries, besides, of course, plenty of plums, pears and apples.

As the berries multiply, the plats may be enlarged. Many will say they cannot find time to cultivate them. We have several plats of bush berries, planted probably fifteen or more years ago, in borders about the garden, along each side of the stone walk to the barn and in sheltered corners and angles formed by the outbuildings. Everyone remarks on the quaint prettiness of the shrubbery around the place, and this sort of fruit has never been cultivated in all these years. The soil was rich to start with, and is in grass, mostly. Leaves and rotted manure, added occasionally, return even better yields of berries, I believe, than is had in many plats that are laboriously cultivated each year.

Each year, from the time rhubarb is big enough to use up to winter apples, we have all the delicious fruit we can use fresh and to can, besides selling many a surplus quart of raspberries and blackberries.

To those who are troubled with birds stealing the fruits, I would say we never are troubled by them, as there is a big mulberry tree on the lawn that bears a heavy load from early June till late fall, and the birds eat these and let the others alone. *New York.*

"A berry patch for every farm" can be a universal slogan which will give general satisfaction

PRIZE LETTER

Planting for Posterity

G. FRANKLIN SMITH

"WERE I to die tomorrow, I'd plant a tree today," someone has said. Many times, both at "the old home" and, in later years' wanderings, as tenant and owner, have I wished my ancestors or predecessors had planted for coming generations. Accordingly, since having a home of my own, although as a renter by the single year, I have set at least berries, and sometimes shrubs and trees. Usually my family has received the benefits, but knowing that others were enjoying the results of our efforts has ever been a pleasant thought. Again, watching their growth and thinking of their future utility or beauty has afforded enjoyment. 'Tis said "there is more in anticipation than realization," but there has been much of both for me. Why do not transients, especially ministers, in villages set a few grapes near buildings, more so as their aims and work are unselfish and looking to the far distant future? [Possibly when ministers are paid salaries commensurate with their worth they will do this.—ED.]

Although reasonably expecting myself to eat of the fruits, did I believe it very certain I should not, I think I would continue to plant trees. When I shall cease this practice I have no idea, but hope not before one year of my decease.

We have growing and are setting in great variety fruit, nut and ornamental trees, both domestic and foreign, well known and recently discovered, hoping to enjoy them while near the horizon of life; and after it's sunset we hope our descendants or perhaps others unknown to us, or with no thought of us by them cherished, may enjoy them to the full.

Someone has said: "What a thought that was when God thought of a tree!" *Delaware.*

PRIZE LETTER

To Plant or Not to Plant

WM. H. BLACK

SOME years ago, at the conclusion of an address to the Adams County (Pa.) Fruit Growers' Convention, Hale, the peach king, was asked if he was still planting apple trees. His reply, in effect, was: "I may be something of a fool, but I am not as big a fool as that." The trend of the apple market for some years later bore out his conclusion that the planting of commercial apple orchards had been overdone, and this was emphasized by the slump in 1914, when the war destroyed the export trade and many orchards scarcely paid expenses.

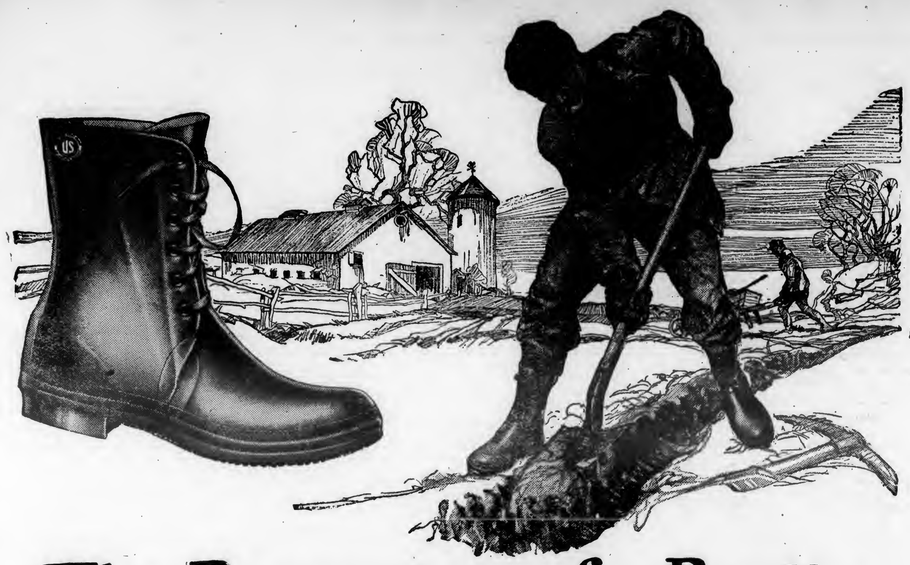
(Concluded on page 25)

PRIZE LETTER

Success with Pears

E. M. ANDERSON

WHEN I was a child I used to hear the old rhyme, "He that plants pears, plants for his heirs," and naturally I got the impression that setting pear trees was a "far cry" from eating



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pears. But good pears are so delicious I set a garden collection of them about the first thing I did when I bought my present home, in 1914. They were well-grown two-year-old trees, and I figure that my little daughter might enjoy them if I couldn't, for some of my friends told me I'd never live to eat any fruit from the trees I was setting that year. My orchard site is just on the pinnacle of a long but gradual slope, not steep enough to be called a hill, but rather high on top because it is so long. The pears are on one side of my cherry orchard, and the whole orchard has been cropped ever since, either with oats, buckwheat or a similar grain crop, but it has never been heavily fertilized or had any special care in any way. One year I had a block of melons and pole beans in one corner. They were fertilized in the hill, but I see no appreciable difference in the fruit trees in that block, unless possibly the pears were forced into earlier bearing; and the ones that bore last year have not outgrown their neighbors in size. Two of them were so loaded with fruit that we expected to prop the limbs, but by gathering a few of the ripest ones earlier than the others the necessity was obviated. We have some older pear trees which bore well, but their fruit was little by comparison, though we would have called it nice if we had not had the fruit of the young trees which was so infinitely superior in size and beauty. Practically every pear was perfect and so immensely large that we almost wondered if they were Bartletts. The Bartlett quality and flavor were in no wise lacking, however, and now that I know it is possible to get such fruit within four or five years of planting—and that by the greenest of amateurs—I don't believe I'm too old to plant fruit trees for myself yet at thirty-eight. He who plants pears *may* plant for his heirs, but not exclusively for them, by any means.

New York.

PRIZE LETTER

Pruning

C. S. FERRILL

WE do not pretend to know all there is to learn about pruning, but we have learned some things that might be of help to others if they would profit by our experience. While our knowledge is no secret, still these same principles are often ignored by those who experience more or less failure.

In pruning, use sharp instruments, and make a clean, smooth cut. A bruised or splintered cut disfigures the tree, but what is even a more serious consideration is that it is a direct invitation to decay. In pruning, make the cut as near the trunk as possible. An unsightly and unprotected snag is also an invitation to rot. Prune out all water sprouts and dead or severely injured branches. Water sprouts sap the vigor of the tree, while dead or injured branches may harbor disease or dangerous insects or both; also, both obstruct the entrance into the inner part of the tree of the bright sunlight. In pruning, prepare for the admittance of as much direct sunlight as possible, for you must remember that sunshine is a great disease fighter, also a great benefit in helping to ripen the fruit and give it a good color. *Kentucky.*

All fruit trees except sour cherries, since they are seldom attacked by San Jose scale, should be sprayed with either commercial concentrated lime-sulphur solution diluted with seven parts of water, or a good miscible oil diluted with fifteen parts of water, during March or April, before the leaves expand. Thoroughness of application is essential to success.

PRIZE LETTER

Fine Berries Sell Readily

J. FRANKLIN FRETZ

I SET fifty Munger Blackcap raspberries, twenty-five Cumberland and twenty-five Black Diamond between my apple trees in young orchard. They did well, but were in the way to cultivate and work around trees. So in spring of 1918 we transplanted them to our berry patch, placing them in rows six feet apart and three feet apart in the rows. I bought one hundred Cumberland, and also had tips rooted of our own, making in all four hundred hills. This berry patch had produced a crop of navy beans, sweet corn and broom corn the year before. We gave it a good coat of stable manure, plowed it well, and made soil thoroughly fine before setting our berry plants. While growing our canes we grew Telephone peas and navy beans in the middle of berry rows. All was thoroughly cultivated the season of 1918. In 1919 stakes were driven at ends of rows and braced. Other stakes were placed fifteen to twenty feet apart, and old fence wire fastened on, to which the canes were tied. During the early part of 1919 a forkful of stable manure was placed around each hill. When ground was fit to work, our 13-year-old daughter and 11-year-old son plowed the entire patch, throwing the furrows toward the rows. They also did all the cultivating, which was about every ten days or whenever ground was fit to work, up to ripening of berries. These were all Blackcaps and nearly all Cumberland. Four hundred quart boxes were picked from this patch, which we sold right at the patch for 15 cents per box, or delivered them in a village a mile away. Automobiles came from towns eight to fourteen miles away, all claiming the berries were the largest and plumpest on the market. Many orders of late comers were never filled. Some came back for the second and even third order. *Pennsylvania.*

A wise selection of inter-crops while the orchard is growing reduces its cost and improves its quality

PRIZE LETTER

A Grape Lesson Learned

MINNIE MICHAEL

"WOULD it be all right to wrap the end vine around the lower wire before putting it up?" I asked a man who trimmed our grapes one year. "It would be for that one year," he replied. "You would get more fruit. But don't do it, for it would spoil the wood for the next year. Of course, the end ones may be slanted a little, but the rest should go straight up."

Well, we followed his advice and always tied them that way until one time my brother came back from a visit in another county. "You ought to see how they tie grapes down there," he said. "They just wrap the vines around the lower wire a couple of times, and then put them up. They do it quick, too." The long and short of it was that we had to tie our grapes that way once, and only once, for the result was it spoiled the wood, not only for one year, but a number of years. The wires cut into some of the vines until they were almost worthless, and the arms became so frightfully long that they would run away past each other so that the canes on the two would come all in a bunch and there would be big open spaces.

My brother saw his mistake, and we did no more winding after that, but tied them the old way, and whenever we can we put up nice, strong vines that start at the bottom, and cut away as much of the old wood as possible. *Pennsylvania.*

PRIZE LETTER

My Neighbor's Peaches

E. O. JEAN

MY neighbor is constantly giving me an object lesson. I saw him mulching his peach trees last fall, and then he told me they could be pruned any time after the leaves fall off and before the sap rises. He also pointed out that the fine, dark green leaves stayed on until late in November, and remarked that this feature is a sign of their health and vigor. Early in the spring the dirt is cleared away from the roots of the trees. Meticulous care is given, and no worm or egg escapes that is on the butt or exposed roots. A spray containing lime, sulphur, carbolic acid and water is used on these parts of the tree. For this a five-gallon spray tank is used, carried conveniently across the back. Wood ashes are also used.

The soil that has been thrown from the roots is not used in refilling, but earth is brought from the center of the rows for this purpose. My studious neighbor contends that the earth removed from the roots contains many eggs and bugs, and should be carted away from proximity to the tree.

When winter leaves, the trees are sprayed for scale with lime and sulphur. When the blossoms fall, lime, sulphur and arsenate of lead are used. The orchard was plowed and harrowed as many times as opportunity permitted—three times. No crop was grown between the trees. There are 300 trees in the seven-year-old orchard, and 225 in the four-year-old. More symmetrical and beautiful groups one rarely sees.

The Belle of Georgia was the earliest peach. It was satisfactory, but needs more spraying than any of the others to bring it to perfection of growth and appearance. The Hale peach has never had an opportunity to do its best. Two weeks of rain ruined about sixty baskets just as they were at marketable maturity. The Elberta, Crawford Early, Crawford Late and Smack are great favorites. Too much cannot be said about the good qualities of these varieties.

My neighbor regards these small orchards as the greatest paying portion of his farm. He believes nothing can pay, including crops, without minutest attention to detail. The culls were sold at $1 a basket. The fruit graded and packed in 1½-peck baskets sold from $1.50 to $2.50 per basket. While hauling by truck was necessary to sell part of the crop in Baltimore, much of it was disposed of at the place. On Labor Day, September 1st, $130.50 worth of peaches was sold at the orchard. *Maryland.*

Pruning young apple trees during the dormant state affects the vitality of trees less than the removal of twigs and branches during the growing season.

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JANUARY 15, 1920

War's Lessons Crowd the Classrooms

WE don't often think of the present shortage of houses as affecting a college education, but such seems to be the case. This is the time of year when the short-course men flock to the agricultural colleges for a ten-week term to better fit themselves for their chosen work. The regular classes at most institutions, however, are so overcrowded that it is difficult, if not impossible, to find accommodations for more students in classrooms and dormitories. Connecticut State College of Agriculture is forced to abandon its winter courses entirely this year for this reason. New York's state college at Cornell has a record-breaking enrollment, and, while it is fortunate in having the city of Ithaca adjoining its campus to house the onrush of students, lack of space in classrooms and laboratories prevents some departments from offering any short-course work. At Pennsylvania State College, where the town of State College is growing always just a little behind the growth of the college, as it is practically its only source of living, the lack of space in college dormitory and rooming house is overcome by housing the surplus students in another town three miles from the college. After our recent war experience there has been a great rush to obtain college training, and thousands of boys who would otherwise have failed to see the advantages of a little more schooling have had driven home to them the lessons which as a rule do not come until it is too late in life to correct mistakes and live over again the days which only come once.

Our Horticultural Special

WE doubt if anybody can read all the prize-winning letters in this special horticultural issue without getting a desire to go right out and plant some fruit vines, bushes or trees. The reason the letters inspire such a feeling is because they are true experience stories, written by just such people as you and us, who have plenty to do in a day's work but always find time to have some of the good things of country living. Of such things, fruit may easily be had, but is often overlooked. Some people would have us believe that every farmer ought not to grow his own fruit, but that only the specialists should produce it, because they can grow it better. Maybe the specialists produce the most fruit which takes the prizes, but if all of us had to go to them with our baskets when we wanted some ourselves, there would be a whole lot less fruit consumed. The ideal farm has its year-around supply of home-grown fruit, and, located as we are in this section, there are many kinds and varieties to choose from. A word of caution should be sounded here regarding varieties mentioned in the prize letters. It must not be forgotten that what is good in one section is not always the best in another. The surest way to know what variety to plant is to visit in your locality and find out what is giving the best satisfaction for the purpose desired, and then place your order with a reliable nurseryman.

Experience letters for our Poultry Special, to appear February 15th, our Garden Special, to appear March 1st, and our Live Stock and Dairy Special, to appear March 15th, should reach us not later than fifteen days before date of issue. Surely you have discovered something along one or all of these subjects which would prove beneficial to other men working along similar lines. Write a letter and tell us about it so that we can pass it on for the good it will do.

A Drive for Farm Bureau Members

OUT in Iowa they have just finished a whirlwind campaign for the farm bureau. They have a state farm bureau federation, and plan to ratify the constitution of the American Farm Bureau Federation so that they will be a part of the national organization. In order to do away with the annual scramble for yearly membership and dues in the local organizations a new plan was tried in the recent drive. Members were taken on a life basis, payable five dollars a year, which includes membership in the county farm bureau and the state federation. In case of death or removal from the county the contract becomes void, and a member can sever his connection with the work by making a written application to the local secretary. Under this plan 102,000 members have already been obtained, and a special working fund, aside from the membership fund, of $300,000 has been raised. It is believed also that nearly 20 per cent. of the farmers and land owners have not yet been canvassed, so the final figures will show a much larger support of the farm bureau work in that state. All this has taken place in a state where agriculture is the main thing and has brought its prosperity. It is the state where all the people come nearer owning an automobile than any other—there is a car there for every six people, compared to every eighteen people in Pennsylvania or New York. They have substantially supported a movement which seeks to benefit them, and it may be well in passing to remember what they did, because many other states will have to face the same situation.

Agent and Press—the Best Combination

SPEAKING of the farm bureau recalls a statement recently made by the Department of Agriculture at Washington regarding the relative efficiency of the county agent and the agricultural press. The authorities there asked 2300 farmers in the northern and western states what extension agency was the most helpful to them. Thirty-eight per cent. of the men interviewed said that they received most help from the county agent and the farm bureau, while 31 per cent. gave the agricultural press the preference. This shows how close these two extension agencies are running in their race for popular favor and how they can best serve by working together. When the first agitation was begun for the establishment of the county agents and farm bureaus the great cry was that the extension work of the agricultural colleges and experiment stations as carried on through their reports and bulletins was not reaching the people it should. That this is still true seems to be proven by this same investigation, since only 3 per cent. of the farmers questioned gave the bulletins and agricultural reports first place in helping them. It is interesting, too, to note that an equal number, 3 per cent., placed help they had received from farmers' organizations above all the rest. In these days, when the present and future work of the farm bureau is under consideration, it is well to study surveys of this kind and then see what can be done in your own community to improve the service rendered by your local farm bureau before expecting all troubles to be overcome by a national organization.

Pennsylvania's Share of Game

WE often think of the magnitude of Pennsylvania because it has so many head of dairy cattle, horses, hogs or sheep, but it is only when the annual report of the game commission comes along that we realize the diversity of the state. During 1919, according to the commissioners' report, there were 2913 male deer and 472 bears shot by hunters. The nearly three million rabbits and half million squirrels killed don't impress us much, but to think of the 378,690 pounds of deer meat and 94,400 pounds of bear meat, it seems as if we still had plenty of rough land. Over five thousand wild turkeys and many thousands of ruffled grouse, ring-neck pheasant, wild water fowl, quail and woodcock also fell prey to shotguns. But, then, we must expect there is something to kill when 393,697 residents took out hunting licenses. If nothing but the game had been killed it would not be bad, but the records show that 35 persons were killed and 128 wounded during the year on account of hunting accidents. This was an increase over previous years, and can largely be prevented if more care is taken. The governor has recently appointed a new secretary of the game commission, Seth E. Gordon, to succeed the late Dr. Joseph Kalbfus, who filled that post so efficiently for many years. He will be assisted by ten traveling game protectors, who will supervise the work of the sixty-seven regular game officers located in the counties. The game commission also has charge of the noxious animals in the state, and is kept busy looking after them. Last year nearly seventy thousand dollars was paid as bounty claims for wildcats, monks, weasels and foxes.

Guessing as to What Comes Next

HOW would it do if we paid a gentleman down in Tennessee $10 a year to send us, about the middle of each month, a weather forecast for the following month? We would know, for instance, that "the warmest periods of January will be about the 3d, 12th and 27th; coldest periods about the 8th, 19th and 23d." Then, no matter whether you live in New England or on the Pacific coast, if you want to know what kind of weather to expect, all you need do is read the "forecast," and prepare accordingly. The entire plan, of course, beats having to depend on the almanac, left by the medicine man, as to the best time to start harvest, but it is a long way from the faith which can be placed in the government daily weather predictions. Even science, backed by observers' reports from all over the country, often makes mistakes regarding the next day's weather, but we know it has given us an honest conclusion, rather than a guess. Since there is an old saying, "One man's guess is as good as another's," there is little need of us helping our southern correspondent make some "easy money."

Bulletin Helps for Farmers

"Mushrooms" is the title of a twenty-page bulletin just received from the Maryland Agricultural Experiment Station. It tells how to grow these edibles, which in certain sections have become a staple crop and represent a business amounting to thousands of dollars annually. A copy of the bulletin may be obtained by addressing the Maryland State College of Agriculture, College Park, Md.

From the New Jersey Department of Agriculture comes an exhaustive thirty-six-page illustrated bulletin on the "Collection, Handling and Sale of City Stable Manure." Those interested in its use may obtain a copy of the bulletin from the secretary of agriculture, Trenton, N. J.

PRIZE LETTER

Grapes for the Home Table

E. M. ANDERSON

About ninety-nine out of every hundred farmers will tell you "it would be foolish to set grapes here. Don't you know we're out of the grape belt?" Every last one of them will do without any except for an occasional basket they can buy.

I know one farmer who has a nice row or two of grapes, and they look just as thrifty as the grape-belt vines. They probably aren't as productive, though I don't know that they are not, but his family always has grapes. Why not the rest of us? I can't put up a very loud crow, because in the five years that I have owned land I haven't raised many, but I have succeeded in getting a few, and I believe I can get more. The trouble with the ones I have had hasn't been the fault of the vines. I set one bunch of vines in my cherry orchard, between the trees in the row, and every time the orchard was cross-harrowed they were forgotten and buried. An extra early vine in the garden has been harrowed over and cut off two or three times, but has persisted in coming back like a weed, till this year it has grown such a quantity of vine that I wonder if its apparent adversity has not really been a benefit in giving it an extra root development. Anyhow, it is nice and thrifty, and I'm looking for fruit next year. Most people plant Concords exclusively, but I wouldn't. Our seasons are pretty short for grapes here, anyway, and why not have the earlier varieties that don't require so much time? I haven't a single Concord, though I set three or four. For me they haven't proven any more hardy than Early Daisy, Campbell's Early, Moore's Early or even Delaware and Brighton. It is still uncertain whether the white and the red varieties will bear here, but I'm trying a few. One can be reasonably sure of Wordens and Campbells and Moores, and surely they are good enough for anyone. Wherever I know of a farm grape vine, the people have grapes, and I'm going to have them, too. In many cases they don't receive a bit of care, but they bear well.

New York.

To Plant or Not to Plant

(Concluded from page 21)

But, for causes somewhat difficult to determine, the prices of fruit have risen rapidly, and are now at their highest level. One reason for the diminished production is the passing of the small home orchards—the kitchen orchards—and the resulting country market. But this does not account for the greatly increased demand and price. The seconds, which were formerly shipped in bulk and had to be disposed of before the market for fine fruit stabilized, are now cared for by the great number of canning, drying and preserving plants, to the great advantage of the orchard men. And, while apples are higher than ever before, the people who do not live on salary seem to have more money than ever before, and fruit seems to have passed from the luxury to the necessity list.

In a statement recently given out by the canning house men it is stated that there has been but little planting of apple trees for six years, and the nurserymen in part confirm this. Of course, both these interests wish to cause increased planting. Orchard men are not so outspoken. To quote: "It takes 12,000,000 trees every year to maintain our normal production, therefore we are, in round numbers, 72,000,000 short in planting. To speak conservatively, however, we are safe in saying that we are certainly more than 60,000,000 trees short, which will allow for any local planting that might have taken place in the meantime. The possibilities of mature trees twenty years ago would be an excess of 50,000,000 barrels in the United States. The present possibilities of mature trees are only 30,000,000 to 35,000,000 barrels. This is 15,000,000 to 20,000,000 barrels less production than twenty years ago; besides, the population has increased from 75,000,000 to 100,000,000 in the same time. In addition, there is a much larger distribution for apples now than there has been in the past, owing to improved facilities of transportation, storage and converting the apple into various products. The consuming public is also learning to realize the wholesome food and health-giving qualities of the apple. These four things—decrease in planting, increase in population, improved marketing, and learning to 'love' the apple—are bound to make the grower realize the future of his enterprise."

While this statement—undoubtedly made by those whose interest it is to increase planting—may perhaps safely be discounted to some extent by prospective planters, the general truth of it is patent to all who are conversant with the situation, and the figures will at least be useful as a starter in computation.

The advance in the price of all "hoed crops," so called, will reduce the loss usually born in the ten or twelve years that it has been usually required to bring an orchard to a paying basis. And up-to-date cultivation and care will reduce still further, if not altogether destroy, this factor on the wrong side of the ledger. To the writer this seems to be a good time to plant.

Pennsylvania.

PRIZE LETTER

Trimming with Moderation

MYRON C. SAFFORD

We often see it recommended to remove the tops from high apple trees and compel them to grow low, so as to facilitate spraying and harvesting the fruit. The theory is right, but the advice to be several years in the operation is generally neglected. To remove the entire top or do a severe pruning on a neglected tree is nearly as fatal as to amputate all of a person's limbs at one operation, which all surgeons would refuse to do. It is too much of a shock. A patient would either "bleed" to death or develop some disease that would kill them. So, if you "dishorn" or prune, extend the operation over three or four seasons, giving the trees time to gradually replace what is removed with new wood.

New York.

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PRIZE LETTER

Planting Apples to Sell

G. FRANKLIN SMITH

As early varieties pay at least equally as well as winter ones, we have planted these in the majority. Again, as the Yellow Transparent, being the very first to ripen, is most popular, and Williams' Early Red, because of its color, excels all others following, these are our favorites and all we want, for, unless in very large orchards, the fewer varieties, the better. For winter, Stayman's and Old Winesap are enough.

We try to set in the fall (peaches in the spring), since wounds heal over and rootlets start doubtless long before they could be planted in the spring; the earth settles around them, and, while they may not "gain a year," as some have claimed, no doubt several months are saved. We do not prune until spring.

We use the modified square system of planting and with peach-and-apple fillers, thus: The first row is a "permanent row," in contradistinction with the second, which is a "filler" row; third row, "permanent"; fourth, "filler," etc. The first tree in row No. 1 is "permanent"; the next, a peach, "filler," to be removed in ten or twelve years; next, a "permanent" apple, like the first tree in the row; then, peach, apple, etc. In the second row ("filler row"), first, which is opposite the permanent apple in the first row, is a peach; next, "filler" apple, to be removed in fifteen or eighteen years; then, peach, etc. Third row is like the first; fourth, like the second, etc. If we wish permanent trees to stand forty feet distant, we plant fillers exactly between them, or twenty feet; if thirty-five feet, then seventeen and one-half feet, etc. Theoretically it may seem unadvisable to thus mix peaches and apples, but in practice it "works out all right," and in the future we intend to follow the same practice. On account of blight we keep pear trees as far away as possible. It has been said that no farm was large enough for both an apple and a pear orchard. *Delaware.*

PRIZE LETTER

How we Make Lime Sulphur

C. C. CONGER, JR.

For a number of years we have practiced making our lime-sulphur spraying solution for San Jose scale, finding it superior as well as cheaper than ready-prepared mixtures. Our apple orchard of twelve acres outgrew the common kettles so generally used for boiling lime-sulphur solution, making larger vessels necessary. In making a change we made a leap in the dark that proved to be one of the best investments we ever made. We ordered two large 75-gallon feed cookers, finding them ideal vessels for boiling lime-sulphur solution, as well as useful on the farm for a number of other purposes. With these immense cookers, holding, as they do, 150 gallons of solution, one man can easily keep our gasoline sprayer going, using two leads of hose.

We prepare our lime-sulphur solution in the following manner: To a small quantity of water in kettle, with fire burning, we add 16 pounds of flowers of sulphur, pouring sulphur in by degrees and stirring till we have a thin paste. We now add 14 pounds of unslaked lime, and stir slowly while it slakes, after which we add 10 gallons of water, and boiling vigorously for an hour. We now add enough water to make 50 gallons, and the solution is ready for spraying. Since it is advisable to apply home-made lime-sulphur solution to the trees warm, we find this an easy task with our feed cookers, using one kettle for boiling solution and the other for hot water. I feel safe in saying these feed cookers have eliminated 50 per cent. of our spraying troubles, enabling one man to do with ease what formerly required two men to accomplish by hard work. Furthermore, the feed cookers enable us to retain the warmth in solution an indefinite period of time and always have at the desired temperature when needed. *Virginia.*

Strawberries—The Popular Small Fruit Crop

In value the strawberry crop in the United States is surpassed among fruits only by the apple, peach and grape. The value of the crop, according to the last census, was $125 an acre, as compared to an average value of about $15 an acre for wheat and corn. It is a much more intensive crop than the grains, and should be treated as such.

When raised in the home garden, varieties are desired which have the best dessert quality and ripen during a long season or in succession, without reference to their ability to stand long shipments. Market gardeners also raise strawberries under intensive methods of culture, and, since they are located near the markets in which their crops are sold, they are not interested primarily in the shipping quality of the varieties. Truck growers who are more interested in shipping to distant markets should give consideration to the shipping as well as the dessert quality of the varieties they grow.

In localities subject to late spring frost a site for strawberries should be somewhat elevated, as cold air settles in low places, and frosts occur there more frequently than on the elevated spots. Strawberries thrive best on soil which is naturally moist but not wet. Plants on wet soil usually make very little growth in the summer, and are likely to be killed when the ground freezes in the winter. The specialists in the Department of Agriculture at Washington recommend, therefore, that the site chosen for strawberries be well drained. Ordinarily a site having a gradual rather than a steep slope should be selected. By choosing different slopes it is possible to vary the period of ripening several days, as the berries having a southern exposure will ripen earlier than those located on a cooler northern slope.

Strawberries not only have a wide climatic adaptation, but may be grown successfully upon almost any type of soil, from coarse sand to heavy clay, provided it is well supplied with moisture and at the same time well drained. When early fruit is desired, sandy soil is often chosen, since the berries ripen somewhat earlier than on clay soil, other conditions being the same, though heavy yields can be secured on either type of soil. All soils for strawberries should be well supplied with humus.

The preparation of the soil should begin usually at least two years before the plants are to be set, or the plants should be set in soil which has received preparation in growing other cultivated crops. Newly plowed sod land should not be used, because the grass roots may prove objectionable and because of the danger of injury to the plants from white grubs. The land must also be freed of quack grass and any other seriously persistent weeds. If the soil is deficient in humus a green manure crop, preferably a legume, should be grown, or stable manure should be applied.

Plants may be set at any time in the spring or summer when moisture conditions are favorable. These are usually best in early spring, and most of the planting in the eastern United States is done at that season. When there is a continuous covering of snow in the winter which gives the plants protection, planting can be done in the autumn, but where this is lacking, and alternate freezing and thawing occur, the planting should be done in the spring, unless some protection, such as a mulch, is given.

Setting the plants so that the crowns are even with the surface of the ground after the soil has been packed about the roots, and making the soil very firm about the plant, are important. If the soil is not properly firmed about the roots, air gets to them and they are likely to dry out, resulting in a feeble growth or none at all. Two systems of training strawberries are in general use, the hill system and the matted row system. Under the former the plants are set six to twenty-four inches apart in rows from three to three and one-half feet distant. The Chesapeake, Clark and Marshall are more frequently grown under this system. Under the matted row system the plants are set in rows from three to five feet apart, and the runners are allowed to fill a space a few inches on either side of the row, thus making a solid mass of plants. The Dunlap, Gandy and Aroma varieties, which make a large number of runners, are rarely grown in other than matted rows.

Flower stems usually appear on strawberry plants soon after they are set. Until the plants become firmly established after transplanting, the production of fruit is a severe drain on their vitality, and for this reason the flower stems should be removed as they appear during the first summer's growth. Under the hill system of culture the runners should also be cut whenever they appear throughout the first summer. It is necessary to till the newly set strawberry plants frequently during the early part of the season in order to conserve moisture, and later to develop runners.

A recently issued farmers' bulletin, No. 1028, from the United States Department of Agriculture at Washington gives full directions for growing, harvesting and utilizing strawberries in the eastern United States, and may be obtained free by addressing the Division of Publications, Department of Agriculture, Washington, D. C.

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PRIZE LETTER

Raspberries for Home Use

MARY C. CROLL

Our experience with raspberries is such as to recommend them to those having little time to cultivate fruit and yet like abundance for their own table. Fifteen years ago our Cuthberts were planted in a row along the Osage orange hedge that separates the garden from the lawn. You may say it was a poor place to plant anything, but they were put there so as not to interfere with the garden in any way. We never regretted it, as they have been growing there ever since and producing abundance of the largest and most luscious of berries ever since the second year. Have had no fertilizer whatever in all that time, except the leaves gathered off the lawn each spring and thrown over among the canes, forming a mulch and a kind of fertilizer. They require but little attention, only cutting out the old canes where done fruiting, and later thinning the new canes in the row and taking tops off to stand three feet high. *Pennsylvania.*

PRIZE LETTER

Marketing the Fruit

MYRON C. SAFFORD

It is just as important to market the crops the most profitable way as to produce them most economically. Of course, situations and conditions, such as distance from the consumer, or a specialty crop, have much to do in determining the disposition of the products. But where the consumer can be reached by the producer, we have proven to our satisfaction that it is much more satisfactory to cut out the middleman and get the 100-cent dollar. We have tried both local and city commission merchants, but never got satisfactory returns except on co-operative marketing of wool. When we went to the consumer with a "square deal" we have had no difficulty in creating and holding a profitable trade. We meet the statement, "We do not have time to retail, with the reply, "Produce less, and get more for it." The motor truck is a great help in getting there. *New York.*

Fertilizers for Peaches

In experiments made to determine what fertilizers are best to apply to peach orchards the Ohio Experiment Station has found that nitrate of soda is most necessary. The amount to use varies for different orchards, but in the station experiments two pounds per tree has increased the vigor of the tree and the yield of fruit materially.

Acid phosphate is next in importance to nitrate of soda, especially upon clay soil. This fertilizer gives little or no return unless used with nitrate of soda or some other nitrogenous material.

Potash is the least important of the three, and when used alone on trees lacking nitrogen and phosphoric acid, may prove positively injurious.

The Fourteenth Decennial Census is to be taken during the month of January, 1920.

This is a good time for those who expect to use concrete fence posts to get busy making them.

PRIZE LETTER

A Boy and Some Berries

IVAN D. ADAMS

Last spring I worked three-quarters of an acre of black raspberries on halves. I trimmed them in March, and then I cultivated them in the fore part of April. The soil is a sandy loam. The berries are in the second year of bearing. In trimming I left from three to five canes in a hill. I hoed them three times. All berries should be cultivated once a week until ready to pick. All hills that lap over should have a stake driven in beside them, and canes tied up so one can cultivate close to the rows.

I had ten pickers, and we picked every day for the first two weeks. The berries were sold at North East, and we had seven miles to deliver them to the canning factory. We had seventy-two bushels, which brought us $582. The berries are on the farm of L. I. Wright. *Pennsylvania.*

Suggestions for Home Shrubbery

Landscape gardeners are recommending as substitutes for the common barberry a host of the black stem rust of wheat which causes enormous losses each year to the wheat crop.

Where a purple variety is desired in the shrubbery border, the purple-leaved plum may be substituted, according to P. H. Elwood, Jr., assistant professor of landscape architecture at the Ohio State University. This may also be used as a high background mass or as specimen tree groups on the lawn. The purple hazel may also be used as an accent of color in the shrubbery mass.

Many other shrubs can be used where the common barberry has or would have been planted, such as the five-leaved angelica, red-twigged dogwood, pink weigelia, winged euonymus, white kerria and high bush cranberry.

The common barberry must go, and the sooner we make up our minds to it the better. Root it out, and put something else in its place, and soon its absence will be forgotten.

Washing soda in boiling water poured down the sink at night will keep the drains clean.

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Sowing and Growing Crimson Clover

A. E. GRANTHAM

During the past few years the value of crimson clover for soil improvement has been fully demonstrated by the farmers in Delaware, Maryland and parts of New Jersey. There is little doubt that it is the cheapest and most effective green manure crop that can be grown in these sections. North of the latitude of Philadelphia, crimson clover is grown with greater difficulty, as the plant is likely to winter kill where the land is not well protected by snow during the severe weather. Considering the season and the number of months the plant occupies the ground, the cost of seed, fertilizers and soil preparation, as contrasted with the value of the crop removed and the effects on the soil, crimson clover growing is highly profitable. The experience of hundreds of farmers has shown that this legume will produce a crop of hay and leave the soil in a condition of fertility equivalent to applying twelve loads of stable manure per acre. However, on lands of low fertility the entire crop is turned under. After the soil has been improved, as good results are secured where the crop is cut and removed as where plowed under.

Crimson clover is especially well adapted to the climatic conditions of the states mentioned and to those lying southward. The mild, even climate, with the absence of sudden and extreme changes of temperature, favor the best development of the plant. The amount and distribution of the rainfall during the summer months insure the prompt germination of the seed during the heated portion of the year. The open winters allow the clover to make some growth nearly every month, which is an advantage in conserving the fertility of the soil and in preventing blowing and washing. The length of the growing season is such that crimson clover may be followed by other crops, which, in turn, may be seeded to clover again in the fall. Also, a seed crop of this clover may be removed in time to grow a crop of corn or late potatoes.

Crimson clover will grow on any type of soil varying from a stiff clay to almost pure sand; although the plant wil thrive best, other conditions being equal, on a loam soil. Certain precautions in sowing and fertilizing are necessary to secure good results on heavy clays or on very sandy soils. Earlier sowing should be the practice on clay soils, as the plant must be well established to prevent heaving-out during the winter. A poor, sandy soil will require a small application of mineral fertilizers, phosphoric acid and potash, in order to start the plants. Often the lack of organic matter or humus in the soil will prevent the retention of moisture to such an extent that the clover will die soon after germination, if it germinates at all. While crimson clover has the reputation of growing on relatively poor land, yet in introducing the crop some attention might be paid to the condition of the soil as to moisture and plant food at seeding time.

The general practice of sowing clover is to follow some cultivated crop. This does away with the necessity of special soil preparation or the use of a nurse crop. One of the advantages of crimson clover is its habit of starting growth amid other growing vegetation. Crimson clover sown in corn, tomatoes or potatoes will catch readily if the seed bed is in good condition. Moisture and a light covering of the seed are necessary to insure prompt germination and development. Hence it will pay well to cultivate thoroughly the previous crop, as the shallow mulch formed by proper cultivation will be not only of advantage to the growing corn, but the moisture retained by this practice will leave the soil in the best condition for sowing clover. As crimson clover is sown at the hottest season of the year, some care must be taken to have the moisture conditions favorable. With certain crops, as tomatoes, it may not be practicable to harrow in the seed, but the shade of the vegetation may serve to start germination. Most farmers aim to sow at the last cultivation of the crop, the labor serving a double purpose. On land of low fertility, or after a crop like wheat or oats, the ground must be especially prepared either by disking or plowing. When sown in this manner the growth is generally more rapid, a large stand is secured, and the plants pass the winter in a more vigorous condition.

Crimson clover is often sown along with buckwheat, the latter acting as a nurse crop. By this method a fair yield of buckwheat can be secured, and at the same time, when the crop is harvested, the land has a good stand of crimson clover. The advantage of this practice lies in the fact that the clover gets well started before winter. It is necessary to cut down the general rate of seeding buckwheat from 4 to 3 pecks per acre. The clover is seeded at the rate of 12 to 15 pounds per acre.

Crimson clover when following corn or tomatoes is generally sown at the last working of the crop. Sometimes it is not practicable to seed it in the ground with a cultivator, owing to unfavorable moisture conditions. In this case a light scratch-tooth harrow is used to cover the seed if sown later. It is seeded from July 1st to August 15th, depending on the latitude and the condition of the soil—a fertile soil will bear sowing somewhat later than a poor soil. Seeding may take place on especially prepared ground in the open somewhat later than when sown in corn. In any case it is very desirable to have the plants make sufficient growth for good rooting before freezing weather. The clover should grow sufficiently to furnish a heavy green carpet over the land before cold weather. As to how late it is safe to sow is largely a matter of season. Practice has determined the use of about 15 pounds of seed per acre. Few growers sow more or less. Thick seeding is recommended by some to prevent heaving out. The thick fall growth may in some cases serve to cover the ground so as to lessen the daily freezing and thawing of the surface, which will injure the plants. Too thick growth does not allow so perfect development of the individual plant, and on thin soil the dense stand interferes with the size and maturity of the crop.

Crimson clover is generally sown broadcast by hand, or with a grass seeder. A portable seeder or hand sowing is necessary in standing corn. The even distribution of the seed is facilitated by sowing from horseback, although more seed is required because of lodging. The Cahoon seeder is the type preferred in most sections. On especially prepared ground in the open the wheelbarrow seeder works well. Where practicable it is desirable to cover the seed lightly. The practice of sowing at the last cultivation is perhaps the cheapest method. If possible, seeding should take place immediately after a rain. This is a point in crimson clover culture that is very important. Many growers fail to get a stand because of the failure to observe the proper moisture conditions of the soil at the time of seeding. If the soil has merely enough moisture to germinate the seed, and dry weather follows immediately, the chances are that many of the plants will perish. On some soils, sowing immediately before rain may be satisfactory, but where the land is inclined to run together or bake, the plants may fail to get through. The general practice is to cover the seed.

Like other crops, crimson clover is a heavy feeder of mineral plant food, phosphoric acid and potash, especially the latter. The plant, however, seems to be able to gather much of the potash from the soil, and in most cases phosphoric acid is sufficient to insure a growth. The general practice is to apply the fertilizer to the regular crop only, the clover feeding on the residue in the soil. Where the ground is in good condition and properly fertilized for corn and tomatoes, no fertilizer need be applied for clover following these crops. In order to get a start on poor sandy soils it will be necessary to apply some phosphoric acid and potash, if it can be obtained. Experience has shown that an application of 300 to 400 pounds per acre of a mixture equal parts acid phosphate and kainit will give excellent results even on light lands. Nitrogenous fertilizers are not needed save in extreme conditions, and then only for starting growth. When sown on open ground it will pay in most cases to use some mineral fertilizer. In any case, the minerals are not lost, and will be available for succeeding crops.

Some growers claim good success from top-dressing the clover with acid phosphate and potash late in February and March. This promotes a thrifty growth, and less fertilizer need be applied for the following corn crop. The standard fertilizer for corn, where crimson clover is turned under, is a mixture of acid phosphate and muriate of potash.

The value of lime for stimulating growth or correcting soil conditions for crimson clover does not seem to be fully decided by growers. Experiments indicate that lime is a benefit on soils of a clay type. It should be noted, however, that crimson clover is not quite so sensitive to acid conditions of the soil as red clover.

On soils where crimson clover has not been previously grown it is advisable to inoculate. The cultures for inoculation may be secured from the United States Department of Agriculture or from commercial firms. Another method of inoculation is through the introduction of soil from a field where crimson clover has been successfully grown. Two to three hundred pounds of this soil thoroughly mixed with an equal quantity of ordinary soil will be a sufficient bulk to enable even distribution over an acre of land.

The failure to get a satisfactory stand of crimson clover is often attributable to low-grade seed. A poor stand results either from seed that will not grow or from the presence of considerable weed seed or foreign material. The lack of vitality may be due to the seed being harvested too early, to heating, to molding before threshing, or to age. When the seed is fresh it is of a bright reddish-yellow color, and has a high polish. The color changes to a rusty brown with age, and becomes dull and lusterless. A good grade of crimson clover seed should germinate 85 to 95 per cent. Seed over a year old is likely to deteriorate rather rapidly. It is not commonly adulterated; at any rate, it may be readily identified by the color and by its almost oval shape, which will allow it to roll easily from a smooth surface.

The price of crimson clover seed has advanced considerably, yet when one considers that for $3.50 to $4.50 per acre, including labor, one can secure a green manure crop that has an averaging value of ten to twelve loads of manure, it will be seen that such an investment is highly profitable.

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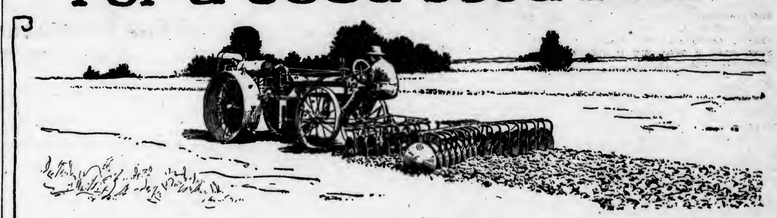

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SINCE 1865 "MOLINE" ON A FARM IMPLEMENT HAS BEEN A MARK OF QUALITY

Field Notes

A. E. GRANTHAM

Drainage is well known to be fundamental to good farming. Now is the time when some of this work can be done with the extra farm help. Of course the winter season is not the time to lay out the main lines of drain, but if such a main is already established, small branches may be put in at odd intervals during the winter. Very often these require only a few rods of digging, and add very materially in redeeming the land. Even when the ground is somewhat frozen, work can be carried on to good advantage where small operations in laying tile are concerned. Furthermore, if the extensive laying of tile is being contemplated for next spring, the drain tile should be ordered as soon as possible, so that it may be hauled while the ground is frozen, so as to be ready for operation early in the spring.

Much of the time on the farm in the winter is devoted to routine work, and therefore it is all the more necessary that the farmer attend such meetings devoted to discussion of agricultural problems as are provided. It is a good idea to attend some of the corn shows and farmers' institutes that are held in every county each year. While you may not agree with everything that is discussed in these meetings, nevertheless they offer an opportunity for getting a new viewpoint on many problems that are constantly arising on the farm. Stagnation of ideas is as fatal in the management of farms as in any other business. The programs carried out by the farm bureaus, farmers' institutes and other public agricultural gatherings tend to bring to the mind the problems in a different light, and thus new methods of solving them are presented.

At an institute the other day the question arose regarding the use of lime on sandy land. One farmer claimed that certain areas in his field had been so injured by heavy applications of lime some years ago that it was impossible to grow crops. Upon close questioning he admitted that he was not positive that lime was the cause of the failure. Where land does not produce satisfactorily it is often explained that the soil had been too heavily limed at some time in the past. While this may be true in some cases, nevertheless the variations in the subsoil on some farms may be so great that these affected areas may be the result of poor drainage, rather than from the application of lime. If lime has been applied in excess, the application of a fair amount of stable manure will correct this condition. If it is the lack of drainage, nothing will take the place of getting rid of the excess water by underdrainage. Just how far lime is responsible for these affected areas on some farms is a question that demands close study, but it is the opinion of the writer that in most cases it is the physical condition of the soil, rather than the result of excessive application of lime.

With the high price of clover seed it becomes imperative, as time goes on, to use every effort to secure a stand of that crop. Not many farmers can afford to pay $25 or $30 a bushel for clover seed and not get a crop. One of the ways to lessen this risk of not getting a stand is to top-dress the wheat in the late winter or early spring with a light coating of stable manure. The manure, of course, should be applied before seeding the clover. The manure forms a mulch or protection to the small plants, and likewise furnishes some available plant food, which is a great advantage in getting a good stand of clover. If manure is not available, short straw may be scattered over the field any time during the months of February or March, and the clover seeded in late March or early April. This has almost the same effect as manure, since it affords a mulch, and an excellent stand will result. As manure becomes more valuable, the question naturally arises whether it can be used to better advantage than to plow it under for corn in the spring as is usually done. The maintaining of soil fertility depends very largely on the amount of organic matter that can be turned under. By using manure as a top dressing for wheat a better stand of clover is assured. Grass responds very promptly to the application of manure, and for that reason, with the high price of hay, it is good business to apply the manure to the grass which will be cut for hay the coming season. Experiments have shown that manure used in this manner not only greatly increased the hay crop, but has the same effect on the corn crop following the grass as would be seen if the manure were applied direct.

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Trapping Tricks for Farm Boys—VI

CHARLES H. CHESLEY

The boy who has followed the methods and suggestions which have been given in this series of articles should have captured at least a few pelts, and all kinds of furs mean money. Perhaps the pelts have been sold, but whether this is true or not, a few suggestions on selling may not go amiss. There are fur buyers in most communities, and some trappers prefer to sell their catch locally. However, this is seldom the best method. There may be some who are prejudiced against sending away the furs. I find some such persons. My own experience indicates, nevertheless, that considerably more money will be obtained if the pelts are shipped to some reliable house. The matter of grading is one that the amateur cannot be expected to understand, hence the buyer often has a chance to take advantage of this fact. Local traders do not scruple, as a rule, against doing this. On the other hand, a fur house of national reputation will be pretty sure to do the square thing.

If I had furs to sell, I would ask two or three houses to send me their price lists. I would choose only those firms which advertise in THE PRACTICAL FARMER and other reliable publications. As a rule it is better to deal with houses located in the part of the country where the furs are caught. Thus, furs taken in New England should be sold to a Boston or New York dealer. Those taken in some middle section may be sold to Chicago or St. Louis dealers. There are, in fact, reliable buyers in all the principal cities of the country. The matter of difference in price is usually largely one of grading, and it will be found that there is no great difference actually in the prices paid.

Considerable bundles of furs should be shipped by prepaid express. Smaller lots may be sent by parcel post with less cost and often with greater dispatch. Always insure such shipments, then something may be obtained in case of loss or damage.

As this is being published the trapping season is probably at least half over. In many sections snow has fallen, and the boys are wondering what to do in such a case. Trappers who make a business of catching furs continue right through the winter and deep snows. However, I must admit that snow is not always welcome along the trap line. When it does come, also, the brooks and springs are likely to freeze so the traps will not spring. Often one may get minks in swift water which does not freeze or under sheltering banks and roots. Baits do not hold their scent so long in cold weather, hence it is necessary to visit the traps often and renew the baits and scents at least every two or three days. A good, strong scent is useful after snow covers the ground.

Some animals do not travel about much after snow comes. The raccoon hibernates in some hollow tree or ledge, and rarely comes forth in the winter. The opossum usually spends the most of the cold season hidden away in some similar locality. The skunk keeps to his burrow for weeks at a time, but occasionally comes out for a long ramble. The muskrat lives in the bank of the stream or his house prepared before winter came on. The mink restricts his wanderings during the early part of the winter, but as spring nears he travels again. The white weasel is a great winter traveler, using old stone fences for his highways. The fox is also a wanderer during the winter, and covers miles every night except during stormy nights and following big snow storms. It will be seen, therefore, that the trapping field is limited after snow falls. Foxes may be taken, but it requires considerable skill to make snow sets which can fool sly Reynard. Some trappers make little huts covered with evergreen branches. Traps are set in the front of these pens, and the bait placed beyond. If possible, these huts should be prepared some time in advance of the coming of snow. In the northern sections, where dense swamps are found, the fox may be taken in rabbit paths. The traps are set in the paths without bait. A tiny bit of cotton is placed beneath the pan of the trap, and pieces of white paper are used to cover the jaws. Brush a little snow over the trap. If the weather remains cold the trap will spring, should an unfortunate furbearer pass, but one warm day will melt the snow, and the next night will freeze the trap tight. In making sets of this kind, one should approach the spot carefully, set the trap, and back away, using an evergreen branch to brush all tracks away. It is not possible to make effective sets in damp snow. If the weather is thawing, make the sets in open streams, springs and under sheltering banks.

Late this winter and during the early spring it is well to make plans for the next trapping season. Musk glands, taken from the rats captured in late winter are of considerable value in preparing scent for next season. Glands from the female mink are also valuable, and the same may be said of the female fox. All such materials should be saved for use next fall. One should also prepare fox bait for next year. If a skunk can be obtained, cut it into small pieces, and place the pieces in a glass jar to become well "pickled." Fox bait cannot be made at short notice. I know a trapper who boasts that he uses fox bait made ten years ago. It is true that well-ripened baits and scents are appreciated by some animals.

Where muskrats are plentiful, as in overflowed marshes, holes may be cut in the ice, and poles put down, having little shelves on which traps may be placed. Fasten the chain at the top of the ice. Such sets should be made near houses occupied by colonies of rats. *New Hampshire.*

The Pennsylvania Farm Products Show will be held in Harrisburg, Pa., January 20th to 23d. Farmers of the Keystone state will not make a mistake in attending these meetings and meet the advance guard of Pennsylvania agriculture. The exhibits promise to be elaborate.

Birds are good friends of the farmer.

Beware of Gas Engine Exhaust

The gases formed by partial combustion of gasoline in gasoline engines are very poisonous. Every precaution should be taken to avoid inhaling them. In the winter time especially, when working in a garage, if gasoline engines are running, keep the place well ventilated. Several deaths are on record, due to individuals working with internal combustion engines indoors without plenty of ventilation.

Whenever, according to Professor Gustavson, of the Colorado Agricultural College, gasoline, kerosene and kindred fuels burn in an insufficient supply of air, as is often the case in automobile engines and tractors, carbon monoxide is formed. This is a deadly poison. This gas has a direct poisonous action on the blood, combining with the red corpuscles and preventing the blood from taking up oxygen.

A Five-Acre Corn King

W. H. Baker, a Greene county farmer and member of house of representatives in the last legislature, is the 1919 king of Indiana corn growers, winning the right to this title by producing 118.2 bushels to the acre on his five-acre plat, with which he competed in the annual state five-acre corn-growing contest conducted by the Indiana Corn Growers' Associations and agricultural extension department of Purdue University. This figure was given out by R. S. Thomas, of Purdue, who had direct charge of the contest.

Nearly 1100 farmers in 55 counties of the state were entered in the five-acre contest at the beginning of the season, but, due to hail, floods, drought or other adverse conditions, only 451 of these contestants finished. Of this total number, 241 received medals for growing more than 75 bushels to the acre. In the prize winning list 46 counties were represented.

Points on Growing Clover Seed

With red clover seed selling around $30 a bushel, many Ohio farmers are planning to produce it this season.

After securing the regular cutting of clover hay, the crop makes a second growth, and, if the season is a normal one, the seed crop develops. Unless attacked by the clover midge or other insects, or else injured by extremely dry weather, one may expect to harvest from one to two bushels of clover seed per acre, according to W. E. Hanger, crops specialist at the Ohio State University.

Ordinarily the crop of clover seed may be materially increased by sacrificing the hay crop to some extent. This may be accomplished by cutting the hay somewhat earlier than the time for the maximum yield, thus allowing the second growth of clover to come on earlier. This will quite likely allow it to mature seed before the clover midge gets in its work.

Another plan worth considering, says Professor Hanger, is to pasture the clover crop for a while in the spring, then take out the stock and allow the second crop to come on for seed. The seed crop would then have a much better chance than if the hay crop were removed.

"I Wasn't Getting an Egg —Now Get 10 a Day"

"I received your 'More Eggs' Tonic and started giving it to my hens. I wasn't getting an egg; now I am getting 10 a day." So writes Mrs. Ernest Campbell, of Mineral, Va.

Any poultry raiser can easily double his profits by doubling the egg production of his hens. Reefer's "More Eggs" is a scientific tonic that revitalizes the flock and makes the hens lay all the time. "More Eggs" will double the production of eggs. Poultry raisers everywhere are making big profits by giving their hens "More Eggs." The results of a few cents' worth will amaze you.

If you wish to try this great profit maker, simply write a postcard or letter to E. J. Reefer, the poultry expert, 9351 Reefer Building, Kansas City, Missouri, and ask for his special free package $1.00 offer. Don't send any money. Mr. Reefer will send you two $1.00 packages of "More Eggs." You pay the postman upon delivery only $1.00, the price of just one package, the other package being free. The Million Dollar Merchants Bank of Kansas City, Mo., guarantees if you are not absolutely satisfied your dollar will be returned on request. So there is no risk. Write today for this special free package offer. Profit by the experience of a man who has made a fortune out of poultry.

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Get More Eggs; Save Feed

Sky-high prices for eggs this winter will make big profits for those who know how and what grain mixtures to feed. Improper methods mean big loss. Prof. T. E. Quisenberry made a thousand hens in the American Egg-Laying Contest lay 200 to 304 eggs each in a year. Another big flock cleared for him $6.15 per hen in nine months. His methods are explained in a new bulletin, "How to Get More Eggs and Save Feed." Get this free bulletin by writing Quisenberry today, addressing care American Poultry School, Dept 1272, Kansas City, Mo.

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TURKEY TOMS. Narragansett, M. Bronze, B. Red and W. Holland. Satisfaction guaranteed, price right. **EASTERN POULTRY FARM, Bealsville, Ohio.**

A Profitable Goose-Raising Experience

MARIE BETTS

The farmer's wife who wishes to make the most of her poultry will do well not to overlook a much neglected branch of this industry, namely, goose raising. My original investment in this branch was 90 cents, but from that small beginning I have worked up a business which pays splendidly. I had good success with these first six eggs, and was able to raise some prize-winning White Chinese geese. This variety of goose lays well. In some cases as many as ninety or a hundred eggs have been secured during the year. The white feathers are another item which should be considered, as they will bring half again as much as colored or mixed ones. It is almost impossible to get pure white feathers, and one can get a splendid price for those which are good.

The birds were fed with the chickens during the first winter, and sheltered in a small house. A shed or lean-to which will protect them in the coldest weather, with the floor covered with straw to keep their feet from freezing, is all that is necessary. If left to themselves they will seldom seek any shelter except in the coldest weather, so they should be driven into the house and fastened there.

In the spring I advertised the eggs, and sold them at 25 cents each. The demand was so great that a number of orders had to be returned. Yearling geese averaged 50 eggs apiece, making a profit of nearly $10 each the first season. I can hardly tell the exact cost of feed, as the birds were fed with the rest of the poultry. One poultryman says that a goose will require no more grain than a hen, and will make a much greater profit.

After the laying season is over the geese are all turned into the orchard. A marsh or weed patch makes an equally good run. From this time until cold weather they will require nothing except good pasture. The idea that one cannot keep geese without a small pond or stream of water is entirely erroneous. My flock of water fowl have no place where they can swim—simply a plentiful supply of clean drinking water deep enough for them to wash out their eyes. They enjoy either sweet or sour milk, but I am careful to see that they do not have much, for they are sure to bury their heads in any liquid, and milk is bad for the eyes.

My geese usually begin to lay about the first of March, and continue laying about every other day until the first of July. I set the eggs under hens, usually about four in a setting. It will take four or five weeks for them to hatch. As the goslings appear they should be taken from the mother and placed in a basket lined with burlap or pieces of an old comfortable. If the hen is to raise them they can be given to her again when the eggs are all hatched. I usually bring them up without a mother, placing a jar of hot water in the center of a well-lined box and then covering goslings and all with a warm blanket. On the second day they may be let out, after the dew is off, and should be placed on the ground every nice day after that. Even if it is rather cold, they will do better if placed outdoors in some sheltered nook where they will be dry. It is impossible to raise goslings on a board floor, for the little legs soon spread out and the birds become lame. This condition can often be relieved by tying the legs firmly together, though the birds will never fully recover. If the sun is very bright they should have some protection, but the most important point of all is to keep them from damp and cold. If they do become wet, wipe them as dry as possible, then place in the hover and wrap warmly. Never put them near the stove as with little chicks. They should dry slowly with the heat of their own bodies.

I usually feed dry bread, gems or pancakes softened with milk or water, and plenty of finely chopped grass, for the first few days. One thing which I have found very good is a johnny-cake made of cornmeal and ground oats sifted, with possibly a little bran or middlings, mixed with buttermilk and soda and baked hard. Crumbled into sweet milk or buttermilk, this makes an excellent feed for little ducks and geese. It is well to wait for some little time after feeding before they are given drinking water. If given with the food, it is apt to cause cramps. It is absolutely necessary that they are able to get all the tender grass or weeds they will eat. I feed the goslings about five times a day, gradually lessening, until by the time they are six weeks old the morning and evening feed is enough. When they are nearly feathered they are able to live chiefly on pasture, although it pays to feed well, for they will grow a much larger frame.

These birds are hardy, and have few ailments. The diseases which bother chickens have almost no effect on them. They are rather more apt to have different kinds of sickness with a hen than with a goose mother. One of my yearling geese laid until the first of July, then set and raised a brood of goslings and little ducks. After leaving the nest she was put in a coop for a few days until the birds had become quite strong, then given her freedom. It was simply amazing the way the little things grew. Under her care scarcely a one was troubled with any sickness. She took them out into the pasture lot, in the orchard, anywhere she wished, for she was constantly on guard. They were always there when the hens were fed, and, much to my surprise, the feed seemed to agree with them perfectly. Her chief delight was in pasturing them beside the road, where every passing auto could admire the strange sight. I really believe she realized that they were admiring the downy little white company.

I have found that if geese are to do well they should not be fed with chickens. They are unable to eat so fast, and there is danger of their being starved to death. I feed ducks and geese together. Birds which live almost entirely without grain during the summer will not do well if fed entirely on whole grain during the cold months. I give a mash composed of one part middlings and three parts clover chaff (leaves and blossoms), moistened with hot water or buttermilk, in the morning, and corn at night. Besides this they should have green food or apples. They will probably clean this stuff up better if it is mixed with the mash. I have been much surprised at the amount of the clover they will eat. I am careful to get only the leaves and blossoms, without any of the hay, and believe this is an item well worth considering at the present high price of feed. We also use equal parts of it in mixing a mash for the hens, and have never wintered a flock in such good condition as this year. It is a food much too valuable to be wasted as it is on many farms.

There seems to be a constantly growing demand for the White Chinese geese. I have sold all my surplus young stock for breeders at a good profit, and the orders were much greater than I could fill. If the eggs are set instead of sold for hatching, the profit from each goose will considerably exceed ten dollars. For the farm woman who has plenty of good pasture, a flock of geese will furnish an income, with very little outlay or special equipment.

Don't Forget to Crow

Experience letters for our annual Poultry Special, which will appear February 15th, have started to come in, but we want and expect more. We will pay $1 each for all we use in the special, as we agreed in our December 1st issue, on page 388. Remember, write about only one thing in each letter, but send as many letters as you desire. Read our horticultural letters in this issue if you want a better idea of what we are after. Poultry letters must be in the hands of the editor by February 1st.

Crow loud, but know when to stop.

What Minnesota Feeds for Eggs

New Jersey and Ohio poultry specialists have told what to feed for winter eggs, so give ear now to what N. E. Chapman, poultry extensionist at Minnesota University Farm, says on this subject:

A mature pullet or yearling hen that molted early should lay a dozen eggs a month through the winter if fed a properly balanced ration—one that supplies the nutrients needed for maintenance, growth and egg production. Aside from good food, the flock, to produce the best results, must be in good health, have a comfortable house, and be given proper care and management.

Scratch feed is essential, and a satisfactory combination for such is composed of corn, wheat, oats and barley, fed in deep litter. For the highest egg production the flock must have ground feed made of equal parts of cornmeal, oats, bran and shorts. Then, animal food must be fed to make the white of the egg. Sprouted grains and other green feed must be used to obtain the maximum output.

Grit—fine, sharp stones—oyster shells as lime for shell making, and charcoal for an internal disinfectant, must be supplied in a hopper, that the hens may eat at will. As a large percentage of the egg is water, a pure supply should be maintained at all times and kept from freezing. Skim milk may also be used for drink.

Got 117 Eggs Instead of 3

Says One of Our Readers

One of our readers says, "More Eggs increased my supply from three to 117 eggs." Any poultry raiser can easily double his profits by doubling the egg production of his hens. A scientific tonic has been discovered that revitalizes the flock and makes hens work all the time. The tonic is called "More Eggs." Give your hens a few cents' worth of "More Eggs" and you will be amazed and delighted with results

$1.00 Package

FREE

If you wish to try this great profit maker, simply write a postcard or letter to E. J. Reefer, the poultry expert, 8351 Reefer Building, Kansas City, Mo., and ask for his special free package $1.00 offer. Don't send any money. Mr. Reefer will send you two $1.00 packages of "More Eggs." You pay the postman upon delivery only $1.00, the price of just one package, the other package being free. The Million Dollar Merchants Bank of Kansas City, Mo., guarantees if you are not absolutely satisfied your dollar will be returned on request. So there is no risk. Write today for this special free package offer.

Poultry Raisers Everywhere Tell Wonderful Results of "More Eggs"

More Eggs" Paid the Pastor

I can't express in words how much I have been benefitted by "More Eggs." I have paid my debts, clothed the children in new dresses, and that is not all—I paid my pastor his dues. I sold 42½ dozen eggs last week, set 4 dozen, ate some, and had 1½ dozen left.
MRS. LENA MCBROON, Woodbury, Tenn.

1200 Eggs from 29 Hens

The "More Eggs" Tonic did wonders for me. I had 29 hens when I got the tonic and was getting five or six eggs a day. April 1st I had over 1200 eggs. I never saw the equal.
EDW. MEKKER, Pontiac, Mich.

160 Hens—1500 Eggs

I have fed two boxes of "More Eggs" to my hens and I think they have broken the egg record. I have 160 white Leghorns and in exactly 21 days I got 128 dozen eggs
MRS. H. M. PATTON, Waverly, Mo.

$200 Worth of Eggs from 44 Hens

I never used "More Eggs" Tonic until last December, then just used one $1.00 package and have sold over $200.00 worth of eggs from forty-four hens. "More Eggs" Tonic did it.
A. G. THODE, Sterling, Kans., R. No. 2, Box 47.

1368 Eggs After One Package

Last fall I bought a box of your "More Eggs" Tonic and would like to have you know the result. From January 1st to July 1st my hens laid 1368 eggs.
A. E. WHITE, Scranton, Pa.

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Don't send any money, just fill in and mail coupon. You will be sent, immediately, two $1.00 packages of "MORE EGGS." Pay the postman upon delivery only $1.00, the extra package being **FREE**. Don't wait—take advantage of this free offer TODAY! Reap the BIG profits "MORE EGGS" will make for you. Have plenty of eggs to sell when the price is highest. Send today!

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8351 Reefer Bldg., Kansas City, Mo.

Dear Mr. Reefer:—I accept your offer. Send me the two $1.00 packages of Reefer's "More Eggs" for which I agree to pay the postman $1.00 when he brings me the two packages. You agree to refund me the $1.00 if both of these packages do not prove satisfactory in every way.

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Getting After the Rats

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1285, FEBRUARY 15.—"Neighbors—Good and Bad." Everybody can write on this subject. Tell us about some of the neighborly arrangements you have which work to advantage. Maybe your opinion, with reasons, about an undesirable neighbor may cause some of us to stop and ask ourselves some questions, so give it, if you are troubled this way.

TOPIC No. 1286, MARCH 1.—The spring farm sales are now in season. To what extent have you found it profitable to attend them? Is it customary in your locality for the seller to provide a free dinner? If not, tell us something about these sales which is typical of your vicinity.

J. C. M. J., New Wilmington, Pa.—The best remedy for rats is persistent fighting of them by every known means. Perhaps the surest agent for fighting the rat is a little dog. Have him with you whenever you anticipate encountering a rat. If moving old lumber, rails, cleaning up rubbish, moving a shock of wheat in the field, husking a shock of corn in October, have the dog along. Praise him for every rat he gets.

A barrel of water or meal with a swinging lid, hung on a pivot, will get a few. I have killed them with a pitchfork when they were eating in a barrel of wheat about one-third full. I once caught, in my apple cellar, a whole family of seven—father, mother and five children—at one sweep, in one night, in a big wire basket trap baited with ham. They were a squirming mess.

The shotgun is sure, and has the added advantage of driving the survivors away to your neighbors. Poison, if judiciously used, will get a few. Cornmeal mixed with one-fourth or one-sixth of its bulk of plaster of Paris is well recommended, the plaster being intended to harden in the intestines.

The best aid in fighting rats is cement. Every building should have a cement floor. Then, an iron granary will be a help, and a corncrib mounted so high on cement pillars that the rats cannot reach the corn.

Use the most enticing baits. Never let up in your fight, but make it a war of extermination. Also get the free farmers' bulletin on rats from the Department of Agriculture, Washington, D. C. New buildings should all be built rat-proof. This can be done. The above are the results of a long lifetime of observation and experience in fighting rats.

E. B. S., Rock Point, Md.—Our method of dealing with rats may be divided into four classes, as we have found through experience that there is no one way to get all of them. So we make use of a flexible combination of plans that keeps the rodents at a minimum at all times.

First, there is a good cat that has a habit of prowling around the barns and corn cribs at odd times, and doubtless accounts for many, though of course her strong forte is in catching mice.

Second, we always keep a number of baited traps set in places where rats are likely to run and where no domestic animal or fowl can get at them. These very seldom catch a full-grown rat, but when a young litter gets to running around, one is very likely to get caught, and then a very little extra attention suffices to catch the rest of that brood, leaving only the old ones.

Third, we have a good setter dog who takes delight in scenting these rodents under any place in the open where they can hide. When he finds one, I take a .45 automatic Colt's, and it is a very simple matter to rout him out of his hiding place; then it is a matter of rivalry as to which will see him first. This method of getting them works best in the spring of the year and after a light rain, when they all seem to come out in the open.

Fourth, and by far the most deadly, is when rats begin living under a building where all their entrances can be gotten at to plug them up. Procure a piece of rubber hose six or eight feet long, and make a gas-tight coupling for the exhaust of the tractor (an automobile or other gas engine would do just as well). Plug up all holes except one, back the tractor up to that, couple on the hose, and place the other end of the hose about a foot down in the hole. Run the engine at the slowest speed, and open the needle valve of the carburetor slightly so as to produce a rich smoke. If the building is small, about five minutes will suffice, or, to make doubly sure, repeat the treatment with a hole under the opposite side of the building. Chemistry tells us that the carbon monoxide gas in the fumes forms a combination with the oxygen in the lungs that can neither be broken up nor expelled, thereby causing death. But whatever it does, experience tells us that is certainly produces the desired results.

R. C. U., Peach Bottom, Pa.—I believe if farmers are raising rats, it is their own fault. A rat will not stay around buildings very long unless conditions are suitable for them to live there. If your barn is flat bottomed and sets low to the ground, nine times out of ten you will have rats, because they can harbor and thrive under the barn floor unmolested. This makes an ideal place for them. They can easily procure a fine living from the contents of the barn, and many times they can get water without leaving the building.

If the corn cribs are built low to the ground, you may look for rats. If the hog pen floors are of wood, sooner or later the rats will take possession. Old board piles or any place where they can harbor unmolested make excellent quarters for them.

Now, with all the up-to-date improvements which can be had without much cost, the average farmer can rid his farm buildings of rat harbors. First of all, if the barn is flat bottomed it should have cement floors.

Don't allow old boards and rubbish to collect around the buildings. If you can't afford a rat and mouse-proof corn crib, maybe you could raise up the old one so that the rats couldn't harbor under it.

At present there are only two rat harbors around our buildings. The hog pen has an old wooden floor in it and built near to the ground. I'm planning on tearing this out and putting in a rat-proof floor. The other place is under the feed box in the barn. I'm going to put a cement floor under it, and then the rats will have to move out.

"When the cats are away the mice will play" is a wise old saying, and can be applied to rats as well as mice. We have three good cats that stay around the farm buildings all the time.

C. E. D., Cumberland, Md.—For years I have caught rats and kept the farm clean by using flat, ought-of-sight traps and small No. 0 steel traps, first making positively sure that there is no hole or crack in stable, shed, etc., where a cat or chicken can creep in. If there is a trap set outside, I cover it with a weighted soap box. The traps are set in the runways or at the mouth of a hole, seldom or never baited. Bait makes the rats suspicious. Often two traps are set in a runway side by side, or four together, making sure of closed doors, etc. Often the trap is covered with several dry leaves or a few straws. If they get "trapwise," I omit traps for several days, then set again, and I never fail to get him sooner or later. I always look at the traps at bedtime. This prevents much agony and escaping. The catch-'em-alive wire traps are useless—too much metal. Usually the spring traps kill instantly. A rat in a hurry doesn't look for a trap in his way, unless the smell of corn or meat bait warns him; then it is all off. They come from other farms every few days, but a glance at the padded runways or the sound of scurrying tells me. Then I get after them, and always get them. Maryland fools have made such war on cats that rats are increasing by thousands.

F. G. D., Richmond, Va.—It has been our experience that once rats establish themselves, it is a mighty difficult proposition to rid the premises of the troublesome pest. Naturally, when we bought land and started anew, we planned all buildings with an eye to curbing the little pest, and in this we have been fairly successful in our efforts. Concrete played an important part in this, affording our best protection. No natural harboring places were allowed, so that the rat tribe found it a rather difficult task to establish homes when they paid us a visit. One bit of advice I would like to see impressed upon every prospective builder, and that is: Take every possible precaution against rodents. It pays, and pays well, even if you have to go to a little more trouble and expense to do it.

While we have used poison in some cases—usually around the house—we did so with some misgivings. Poison is really a dangerous thing around the farm, and might work a world of damage unless extreme care is used both in putting it out and taking it in.

In our time we have trapped a good many rats, but somehow or other they get wary of the traps after a few have been caught. When other means failed, a goodly number of the more wily fellows were disposed of with a .22-caliber rifle from a hidden vantage point.

Another precaution we took, and one that is usually unthought of on the average farm, is to keep everything eatable out of the way of rats as far as possible. Of course, this can't always be done, but it is an established fact that food encourages the marauders, so whenever it was practicable we always kept grains, etc., in rat-proof bins.

Our experience leads us to believe that no one thing will rid a place of rats and keep it entirely free of the pest. You must adopt different methods as your needs arise, and here, as in everything else, an ounce of prevention is worth a pound of cure.

O. J. H., Johnstown, N. Y.—We have experienced considerable damage from rats every year we have been farming until the past three years. The rats destroyed grain in the field, in the barn and in the granary. They also destroyed fruit and root crops in the cellar. They nearly drove us out of the chicken business shortly after we commenced farming.

We tried to rid ourselves of them with a wire cage trap. This is a good remedy sometimes, as we cleared the cellar one night, the trap having nine various-sized rats in the morning. The rats other times would keep shy of the trap, and we were unable to catch all of them by that method. When we find a rat hole, we pour in a pail or two of hot water. This drives them out, and a club or the dog will soon finish them.

Cats have always been a part of our farm stock, but the cats and the above methods always failed to keep away a frequent occurrence of the rat plague. The cats would catch some, but could not catch all, because the rats could hide in the walls and under various objects.

We have been using a large amount of concrete about our buildings in the past few years. A new granary with a concrete floor and galvanized iron sides, and a cellar reconstructed of concrete, did wonders in ridding us of rats. The rats did considerable damage before we used the concrete, because they had easy access to the grain and vegetables, and could hide with ease. They cannot find an entrance into the granary now, and the cellar is a poor home for a rat, with no convenient place to hide if he does manage to enter.

The rats do not come where they have difficulty in finding something to eat. The only rats we have seen in some time have been brought in by the cats from the fields or else some stray ones caught about the barn. The passing of the rat nuisance has meant a large saving from crop loss and much inconvenience.

W. G. Y., Lexington, N. C.—The rat menace with us was a serious matter up until about a year ago, when we set in to wage a war to the finish, if that was possible, and we now believe that we won. The place had several old buildings with decaying foundations, including the granary, and these were the apparent headquarters for the obnoxious rodents. The farm cats and timely trapping kept them down at times, while at other times their destruction became a matter of serious concern, not so much for what they ate as for what they destroyed.

We started in by replacing the old granary with a new one on a concrete foundation and off the ground to the height of the bottom of the wagon box, which was a big improvement over the old one with the lift to the wagon. Next came a concrete foundation under the corn house and a mouse-proof wire screen lining, and one crop of corn has been housed without even one grain going to feed these rodents against our will. The old wood stanchions and decaying floors in the barn were replaced with concrete foundations and patent stanchions for the cows and a concrete base with a plank floor for horses. The concrete and building work we did ourselves in slack times. The convenience of the improvements has more than repaid us for the outlay, and the rat pest, like the negro's watermelon dream, has faded away. We actually know that some years our loss to the rats amounted to several hundred dollars, and we are now free from them by simply supplying some convenient buildings, or "rat sanitation," as we call it.

A. J. L., Albion, W. Va.—About four years ago we were badly troubled with rats. They were in the stable, the cellar and the grain bins. In fact, they seemed to be everywhere that a rat could do mischief. We had a cat, but the rats seemed to have got the better of the cat. We went to the store and purchased a package of a widely advertised rat poison. This was spread on meat skins and put in places where nothing but rats could get at it. The skins were fastened so that the rats could not carry them away. The rats partook of this new dainty liberally the first night, but they did not bother it afterward. They disappeared, and we have not been bothered with them since. We keep one or two cats, but have not seen more than one or two rats about the buildings for the past four years, and have seen but very little sign of them. We killed a few rats in the corn field this fall.

J. U., Lafargeville, N. Y.—The best way to get rid of rats is the way that you can do it the quickest, even though it may not be the easiest way. As soon as I find any signs of them I get the wire rat trap which catches them alive. This is baited and put near their runway and covered over with a cloth. After a few days, if they are still at large, steel traps are set and baited. These are placed under boxes or boards so the cats will not get in them. Sometimes they are placed in the runways. I have found that a steel trap, set and baited and not touched for several days, will generally get a rat. Even though they are shy and suspicious at first, after a time they seem to become used to the trap being there and get caught. I have had a trap set for a week or more and then got a rat in it.

In the meantime, while waiting for them to get in the traps, I do what I can to keep them uneasy and disturbed. If there are any repairs or changes to be made in the building, a cement floor to be put in or anything that will make a lot of noise and create a general and large disturbance, as soon as you are sure that you are boarding some rats, get to work at this noise-producing disturbance. Also get some glass, break it up, and be just mean enough to put the broken pieces right into the rat holes and pound it in solid. Then take lime, lye, wet ashes or any substance which will stick to their feet, and sprinkle it where they run; this will help to get them on the move.

F. P. P., Amaranth, Pa.—We found a number of choice "rat harbors" when we moved here some years ago. The old barn had a loose stone wall, with the floor of the barn very near the ground; the same with the chicken house and hog pen. The corn crib, covered with lath, provided a free lunch for them all winter, eating a lot of corn and spoiling a lot more.

We have tried to do away with them by leaving no place in which they can hide or make their nests. When we built a new barn and chicken house, the walls were made of concrete. The corn crib was covered with ¾-inch wire screen. This keeps out both mice and rats, but is a little too coarse. Rats will reach through and shell off the corn with their front feet; sometimes nothing but cobs would be left next to the screen, while the rats were still plentiful. We tried ¼-inch mesh, and found it to be just right; they can't work through it.

A few of the rodents tried to form a colony in the cow stable, since the troughs are quite close to the ground, but we have been keeping a good cat there lately (by feeding it when we milk), and this winter we have not seen a rat about the premises.

Have never used poison for rats, being always afraid that chickens or some of the farm animals might get it instead.

J. R. T., Edinboro, Pa.—It is certainly a true statement that a rat will destroy three dollars' worth in a year. Not but a few days ago I cut corn fodder for my neighbor. The boy who was throwing down the fodder from the scaffold killed ten young rats; the old one was smooth enough to get away. Around the nest was much corn which had been gathered from the fodder, which goes to prove that the rat is a "costly boarder."

There are many methods of getting rid of rats, but I believe the most successful is the rats' ever enemy, a good cat, which is kept in the barn and fed new milk at each milking—not a sickly, sore-eyed cat, nor one with a scorched back from lying under the stove, but a fine, sleek fellow, trained to live in the barn and fed in the barn from bossy's nice, warm milk. Such a fellow is always on the alert for a rat. Try this method. Be kind to the cat, and treat her gently. Feed her well. Don't scare her by yelling "Scat!" every time she happens in your path. Be her friend, and she will be yours. This is the method I employ, and I have not seen a rat around my premises in a year.

H. E. S., Drewrys Bluff, Va.—Believing that a truth exists in the old adage that "an ounce of prevention is worth a pound of cure," I tried to apply the same to the disadvantage of the rat.

In the year 1912 I built a new barn, and determined to exclude the rats. I dug down into the subsoil several inches a trench about ten inches wide as a starting point for my barn foundation, placed forms above this trench to the required height, and filled trench and form with good concrete to support the sills. Then, erecting the building without boxing or other possible harbors for rats to hide, I completed the same by putting a concrete floor in every foot of the building, 42 by 42 feet. I was careful that no knot holes occurred in the weather boarding, windows and doors fit good, and a rat could not enter or escape.

I have encouraged some good cats to live in the barn, and have kept close watch for evidence of rats, without finding any, except on one or two occasions one or two spent a few days with us. I keep hay and grain and general farm crops, also horses and cows, in the barn, with no annoyance or loss from the rats.

I have since built a smoke house and shop and carriage house on the same rat-proof plan, with apparent success, and feel that I am well paid.

I keep all old boards and other refuse cleaned up closely, and the rats have little chance to hide long enough to increase. I have no building where they can hide under the floor, and try to move all the feed or other produce at least once a year and look for rat holes.

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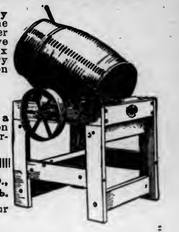

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

FEBRUARY 15.—Several of our contributors have expressed a desire that we have a discussion on "Training Children in the Home." Tell us your experience along these lines. There is a mental, moral and physical side to this question, so write about any or all.

MARCH 1.—What has been your experience raising guineas for market? Tell us not only how you care for them, but how you kill, dress and sell them. Is it a profitable branch of poultry keeping?

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Pets for Pleasure and Profit

MRS. L. D., Richmond, VA.—Pets merely for the sake of having pets never appealed to me very much, but a combination, that is, a pet and a revenue producer at the same time, is an attractive proposition, and, in my opinion, can best be realized in the raising of Belgian hares. They afford even the woman who lives in the small town or city, where land is at a premium, a chance to make a little pocket money with a minimum of trouble and expense. Then, too, they can be grown successfully all over the United States.

The hares can be bred with success about four times a year, beginning when eight or nine months of age. Of course, they are bred more than four times a year by some, but it is not advisable to do this, as it not only weakens the doe, but the young do not seem to be nearly so hardy. The litters vary, running anywhere from six to twelve each.

Belgian hares under ordinary conditions are scarcely any trouble at all, the principal thing being feeding once or twice a day. The food consists of oats, carrots, beets, clover, etc. In fact, in raising them it is best to adopt a "let-them-alone" policy. That does not mean, however, that you can neglect them; it simply means that useless attention or "pampering" is really harmful in certain instances. This holds true especially in the case of the mother. She knows more about her young than you and I; hence we should trust her motherly instinct.

Right now is the most propitious time imaginable to raise Belgian hares, on account of the high prices that meat products are bringing, but too few seem to recognize the possibilities of this as a side line. Too many, perhaps, confound the Belgian variety with the common wild hare, which, of course, are not to be compared either in size or quality of their meat. When mature the Belgian weighs anywhere from 7 to 15 pounds, while the wild ones weigh from 2 to 4 pounds, as a rule. The flesh of the Belgian hare does not have a "wild" taste, and is tender, juicy and white.

As to markets, they find ready sale where the wild species would not be considered, and prices are correspondingly higher.

Mrs. O. J., Rio, La.—The most profitable pets I ever raised were spotted rabbits. They are hardy, breed rapidly, and sell readily. They require a grassy run, with dog-proof fence extending several inches below the surface of the ground to prevent them burrowing out. A piano or large goods box makes an ideal hutch. This must be kept clean, and littered with leaves, pine straw or hay for bedding. They eat anything a cow will, but require a variety. A dish of mixed grain, with hay and green stuff of some kind, cabbage trimmings, carrot and apple parings, turnip tops, fruit tree and rose bush prunings, are all relished. They require plenty of fresh water, and should never be nursed or fondled. Too much handling is not best for pets of any kind.

We keep a cat, but feed her well, and she never molests the birds. Any cat, if forced to subsist on what it catches, will take a bird in preference to a mouse, but if given milk and a little meat, will catch the mice for sport, even if not hungry.

I never wanted a pet bird, and think it wrong to keep such songsters as mocking birds and cardinals in captivity, when they could be so much happier in the trees. I once bought a mocking bird in a cage. I turned the bird out, and made a rat trap of the cage. The bird soon found a mate, and built for three successive seasons in a nearby China tree. He would come to the kitchen window for crumbs and nuts, sit on the porch banisters to sing, and follow me in the garden for cutworms which I would toss him.

B. B., Tully, N. Y.—I cannot understand how any home can get along without a pet of some kind, and especially homes where there are children. It is good for the kiddies to learn their habits, and it teaches them to be kind to dumb animals. When the pets can be made to combine both pleasure and profit, so much the better.

I have never raised any pets for sale, but the most pleasure of my childhood was derived from them. When I was seven years old my brothers gave me a little yellow puppy, which I had fifteen years, and he was one of the most faithful friends I ever had.

While I am fond of all pets, dogs are my favorites. Not only is a good dog a protector to women who have to be much alone, but they are useful in keeping stragglers away from barns. They kill woodchucks, skunks and other rodents that destroy crops and fowls. Because I love dogs and am acquainted with their ways, I have been able to write a number of dog stories for magazines, for which I am substantially paid.

An aunt of mine earned quite a bit raising canaries to sell. She received $5 for the singers, and $2 for the females. Personally, I would not want a canary or a goldfish for a pet. I prefer pets that can have their liberty.

My little nephew is the possessor of a Shetland pony, which was purchased of a woman not far from here who makes a "good living and 10 per cent." on her pony farm.

L. M. S., Georgetown, Del.—For pleasure we have had canary birds, homer pigeons, goldfish, rabbits, fancy poultry, etc, but we find Belgian hares the best combination of pleasure and profit. For the table many prefer them to chicken, as they grow quicker, are clean in diet and habits, very quickly prepared for unexpected company, etc. The meat is all white, and extra fine when fried. They find ready sale, by the pair, if advertised. We keep them in hutches 2 feet by 2 feet by 6 feet long. Two feet at one end is enclosed tightly, with door for cleaning, etc., with small hole opening into the main part of hutch (this is bedroom and a place to hide). The main part, wire front, has doors also.

Bucks have to be kept separate from does; also, they will fight other males. We take little ones away from mother at five or six weeks old, two at a time. Then the doe will breed again, and in thirty days have more little ones, six or more at a time.

We feed any green food in season, such as rape, rye, cabbage, turnips, kale, sweet potatoes, carrots, apples, etc., all the hay they will eat, corn blades, etc., a small handful of meal and bran, moistened once a day. Water is before them all the time. Nursing mothers we give bread and milk once a day.

Mrs. C. H., Howard, N. Y.—I have kept rabbits since 1915, and the first year raised 125. I was keeping them for pleasure, but sold about $60 worth beside the lot I gave away and ate. The day before Easter in 1916 I sold 48 young rabbits for the next day. These brought me $25. I made a box out of wire netting, and a storekeeper let me have it in the back of his store. I had 100 small posters printed advertising them.

We were running four large incubators that spring, and sold all of our chicks and rabbits in one day, and have had a good Easter trade ever since. I now have full-blooded rabbits, and ship to New York city at 25 cents per pound. I have ten does and one buck, and raise about 250 to 300 in the year. I feed my buck dry bread, moistened with the white of an egg, clover hay, ensilage, barley and oats and lots of water. My does get bread and milk besides. The fattening pen has oats, barley, wheat and corn in front of it at all times. Dry bread is given once a week to all the rabbits, and about twice a month I feed branches from pears or apple trees, and salt.

My hutches are in the wood shed. Each one is 3 feet by 6 feet, with half of the front open. I clean and whitewash each box once a month, and have never lost very many rabbits, and very seldom have a sick one. The most danger is at weaning time, and with a little extra care one need not lose the rabbits. I take half of the litter away one day, and the other half two or three days later, when the little ones are about six weeks old. I feed once a day and then at night.

Mrs. A. J. K., Wellsboro, Pa.—Pigeons are profitable pets to raise, as it takes only four weeks for the squabs to reach market size, at which time the parent birds are already laying or setting on another pair of eggs. Persons living near a good shipping point, or reasonably near a city where private or hotel and restaurant orders can be filled, can derive a good profit from these pets because of the fancy prices paid for them. I have had best results from keeping the birds penned up, giving them plenty of water for drinking and bathing, and a variety of grain, such as corn, buckwheat, wheat, and occasionally rice, hemp or Kaffir corn, if obtainable. I always keep a good supply of fine gravel and oyster shell (ground fine) within their reach. They are hardier than chickens, in that they withstand cold weather much better, and by studying their habits and pretty little ways, which seem in some instances almost human, it would be hard to find a more interesting and profitable pet.

Homespun Yarn from Ithaca

Some Tennessee girls made enough money from a pie supper to buy an oil stove and utensils for preparing a hot school lunch. Maybe there is a hint in this for other girls.

They say that the bread mixer is useful for making mashed potatoes that are light and creamy.

According to recent reports, lamb chops are the most popular form of meat served in New York city hotels.

Many cooks add a little vanilla to chocolate or cocoa to improve the aroma and flavor. Have you ever added a little cinnamon, instead? Some folks like it.

A wooden tub or bowl for washing the best pieces of china and glassware will save them from the chips and cracks that are bound to come from a metal or enameled pan or sink.

Persons who have difficulty in getting to sleep say that a glass of buttermilk at night helps.

So sure are we that you will say these most comfortable and good wearing shoes are a big bargain that we will send them without a cent in advance. Send coupon. Shoes will be sent by return prepaid mail. Pay postman $4.60 on arrival. If you are not entirely satisfied on arrival return shoes and money, including postage, postage will be refunded.

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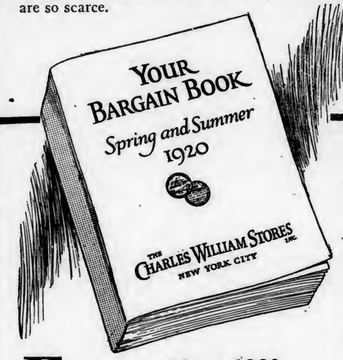

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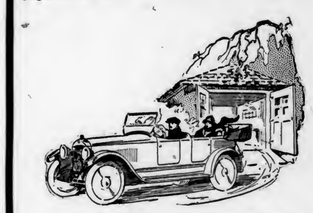

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Milk, eggs and the leafy vegetables are the protective foods. Without a good supply of them health cannot be easily maintained.

"Making a budget" is the business-like way to run the house. The state college at Ithaca, N. Y., has a bulletin on this subject. It is R. C. H. 124.

The best rooms should be on the south and west sides of the house. Maybe you can change things to get living-room, bedrooms and dining-room away from the north and east.

Rugs should not be placed cornerwise in a room, but should follow the lines of walls and furniture.

An office without labor-saving equipment courts failure for the business. One of the reefs that may threaten home life is poor equipment for the wife.

A small fire-shovel with the sides beaten out flat will slide under hot pans for lifting them from stove or oven.

Be thrifty, but not selfish. Thrift without benevolence is a doubtful blessing.

That spoonful of cereal left from breakfast not worth saving? One woman says she uses it to thicken soup or gravy.

Skim milk and stale bread don't sound especially appetizing, do they? But how about milk toast? It doesn't require any magic to make the transformation.

"How to Use the Apple Crop" is a timely bulletin, containing recipes, which the state college at Ithaca, N. Y., will send you if you ask for R. C. H. 122.

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Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9521.—Ladies' brassiere. Cut in sizes 34, 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A strip of elastic is inserted between the back pieces to give freedom of movement.

9538.—Ladies' one-piece dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The skirt extends into front and back waist panels.

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9533.—Boys' suit. Cut in sizes 2, 4 and 6 years. The diminutive trousers are buttoned onto a slip-over waist.

9517.—Girls' and child's coat. Cut in sizes 1, 2, 4, 6, 8, 10, 12 and 14 years. The kimono body is gathered to a drop shoulder yoke.

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9523.—Ladies' circular skirt. Cut in sizes 26, 28, 30, 32, 34 and 36 inches waist measure. It may be made with two, three or four gores.

9525.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The kimono sleeves are joined to the front and back panels.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

SUNNY SLOPES

By Ethel Hueston

Author of Prudence of the Parsonage, etc.

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CHAPTER VI
THE HEAVY YOKE

The burden of ministering rested very lightly on Carol's slender shoulders. The endless procession of missionary meetings, aid societies, guilds and boards afforded her a childish delight and did not sap her enthusiasm to the slightest degree. She went out of her little manse each new day, laughing, and returned, wearily perhaps, but still laughing. She sang light-heartedly with the youth of the church, because she was young and happy with them. She sympathized passionately with the old and sorry ones, because the richness of her own content and the blessed perfection of her own life made her heart tender.

Into her new life she had carried three matchless assets for a minister's wife—a supreme confidence in the exaltation of the ministry, a boundless adoration for her husband, and a natural liking for people that made people naturally like her. Thus equipped, she faced the years of aids and missions with profound serenity.

She was sorry they hadn't more time for the honeymoon business, she and David. Honeymooning was such tremendously good fun. But they were so almost unbelievably busy all the time. On Monday David was down town all day, attending ministers' meeting and Presbytery in the morning, and looking up new books in the afternoon. Carol always joined him for lunch, and they counted that noontime hour a little oasis in a week of work. In the evening there were deacons' meetings, or trustees' meetings, or the men's Bible class. On Tuesday evening they had a Bible study class. On Wednesday evening was prayer meeting. Thursday night they, with several of their devoted workers, walked a mile and a half across country to Happy Hollow, where they conducted mad little mission meetings. Friday night Carol met with the young women's club, and on Saturday night was a mission study class.

Carol used to sigh over the impossibility of having a beau night. She said that she had often heard that husbands couldn't be sweethearts, but she had never believed it before. Pinned down to facts, however, she admitted she preferred the husband.

Mornings Carol was busy with housework, talking to herself without intermission as she worked. And David spent long hours in his study, poring over enormous books that Carol insisted made her head ache from the outside and would probably give her infantile paralysis if she dared to peep between the covers. Afternoons were the aid societies, missionary societies and all the rest of them, and then the endless calls—calls on the sick, calls on the healthy, calls on the pillars, calls on the backsliders, calls on the very sad, calls on the very happy—every varying phase of life in a church community merits a call from the minister and his wife.

The heavy yoke—the yoke of dead routine—dogs the footsteps of every minister, and even more of every minister's wife. But Carol thought of the folks that fitted into the cogs of the routine to drive it round and round—the teachers, the doctors' wives, the free-thinkers, the mothers, the professional women, the cynics, the pillars of the church—and, thinking of the folks, she forgot the routine. And so to her, routine could never prove a clog, stagnation. Every meeting brought her a fresh revelation. They amused her, those people, they puzzled her, sometimes they made her sad and frightened her as they taught her facts of life they had gleaned from wide experience and often in bitter tears. Still, they were folks, and Carol had always had a passion for people.

David worked too hard. It was positively wicked for any human being to work as he did, and she scolded him roundly, and even went so far as to shake him, and then kissed him a dozen times to prove how very angry she was at him for abusing himself so shamefully.

David did work hard, as hard as every young minister must work to get things going right to make his labor count. His face, always thin, was leaner, more intense than ever. His eyes were clear, far-seeing. The whiteness of his skin, amounting almost to pallor, gave him that suggestion of spirituality not infrequently seen in men of passionate consecration to a high ideal. The few graying hairs at his temples, and even the half-droop of his shoulders, added to his scholarly appearance, and Carol was firmly convinced that he was the finest-looking man in all St. Louis, and every place else, for that matter.

The mad little mission, so called because of the riotous nature of the meetings held there, was in a most flourishing condition. Everything was going beautifully for the little church in the Heights, and in their gratitude and their happiness Carol and David worked harder than ever—and mutually scolded each other for the folly of it.

"I tell you this, David Arnold Duke," Carol told him sternly, "if you don't do something to that cold so you can preach without coughing, I shall do the preaching myself, and then where would you be?"

"Without a job, of course," he answered. "But you wouldn't do it. The wind has chafed your darling complexion, and you wouldn't go into the pulpit with a rough face. Your devotion to your beauty saves me."

"All very well, but maybe you think a cold-sermon is effective." Carol stood up and lifted her hand impressively. "My dear brothers and sisters—hem-ah-hem-h-hh-em—let us unite in reading the—ah-huh-huh-huh. Let us sing—h-h-h-hem—well, let us unite in prayer then—ah-chooo! ah-chooooo!"

"Where did you put those cough drops?" he demanded. "But even at that it is better than you would do. 'Just as soon as I powder my face we will unite in singing hymn one hundred thirty-six. Oh, excuse me a minute—I believe I feel a cold-sore coming—I have a mirror right here, and it won't take a minute. Now, I am ready. Let us arise and sing—but since I can not sing, I will just polish my nails while the rest of you do it. Ready, go!'"

Carol laughed at the picture, but marched off for the bottle of cough medicine and the powder box, and while he carefully measured out a teaspoonful of the one for himself, she applied the other with gay devotion.

"But I truly think you should not go to Happy Hollow tonight," she said. "Mr. Baldwin will go with me, bless his faithful old pillary heart. And you ought to stay in. It is very stormy, and that long walk——"

"Oh, nonsense, a little cough like this! You are dead tired yourself; you stay at home tonight, and Baldwin and I will go. You really ought to, Carol; you are on the jump every minute. Won't you?"

"Most certainly not. I haven't a cold, have I? Maybe you want to keep me away so you can flirt with some of the Hollowers while I am out of sight. Absolutely vetoed. I go."

"Please, Carol—won't you, because I ask it?"

She snuggled up to him at that, and said: "It's too lonesome, Davie, and

I have to go to remind you of your rubbers, and to muffle up your throat. But——"

The ring of the telephone disturbed them, and she ran to answer.

"Mr. Baldwin? Yes. Oh, that is nice of you. I've been trying to coax him to stay home myself. David, Mr. Baldwin thinks you should not go out tonight, with such a cold, and he will take the meeting, and—oh, please, honey?"

David took the receiver from her hand.

"Thanks very much, Mr. Baldwin, that is mighty kind of you, but I feel fine tonight. Oh, sure, just a little cold. Yes, of course. Come and go with us, won't you? Yes, be here about seven. Better make it a quarter earlier; it's bad walking tonight."

"David, please?" coaxed Carol.

"Goosie! Who but a wife would make an invalid of a man because he sneezes?" David laughed, and Carol said no more.

But a few minutes later, as she was carefully arranging a soft fur hat over her hair, and David stood patiently holding her coat, there came a light tap at the door.

"It is Mr. Daniels," said Carol. "I know his knock. Come in, Father Daniels. I knew it was you."

The old elder from next door, his gray hair standing in every direction from the wind he had encountered bareheaded, his little gray eyes twinkling bright, opened the door.

"You crazy kids aren't going down to that Hollow a night like this," he protested.

They nodded, laughing.

"Well, David can't go," he said decidedly. "That's a bad cold he's got, and it's been hanging on too long. I can't go myself, for I can't walk, but I'll call up my son-in-law and make him go. So take off your hat, parson, and——. No, you come over and read the Bible to me while the young folks go gadding. I need some ministerial attention myself—I'm wavering in my faith."

"You, wavering?" demanded David. "If no one ever wavered any harder than you do, Daniels, there wouldn't be much of a job for the preachers. And you say for me to let Carol go with Dick? What are you thinking of? I tell you when anyone goes gadding with Carol, I am the man." Then he added seriously: "But, really, I've got to go tonight. We're just getting hold of the folks down there, and we can't let go. Otherwise I should make Carol stay in. But the boys in her class are so fond of her that I know she is needed as much as I am."

"But that cough——"

"Oh, that cough is all right. It will go when spring comes. I just haven't had a chance to rest my throat. I feel fine tonight. Come on in, Baldwin. Yes, we are ready. Still snowing? Well, a little snow—— Here, Carol, you must wear your gaiters. I'll buckle them."

A little later they set out, the three of them, heads lowered against the driving snow. There were no cars running across country, and, indeed, not even sidewalks, since it was an unfrequented part of the town with no residences for many blocks until one reached the little, tumble-down section in the Hollow. Here and there were heavy drifts, and now and then an unexpected ditch in the path gave Carol a tumble into the snow, but, laughing and breathless, she was pulled out again and they plodded heavily on.

In spite of the inclement weather, the tiny house—called a mission by grace of speech—was well and noisily filled. Over sixty people were crowded into the two small rooms, most of them boys between the ages of twelve and sixteen, laughing, coughing, dragging their feet, shoving the heavy benches, dropping song books. They greeted the snow-covered trio with a royal roar, and a few minutes later were singing "Yes, we'll gather at the river" at the tops of their discordant voices. Carol sat at the wheezy organ, painfully pounding out the rhythmic notes—no musician, she, but willing to do anything in a pinch. And although at the pretty little church up in the Heights she never attempted to lift her voice in song, down at the mission she felt herself right in her element, and sang with gay good will, happy in the knowledge that she came as near holding to the tune as half the others.

Most of the evening was spent in song, David standing in the narrow doorway between the two rooms, nodding this way, nodding that, in a futile effort to keep a semblance of time among the boisterous worshipers. A short reading from the Bible, a very brief prayer, a short, conversational story-talk from David, and the meeting broke up in wild clamor.

Then back through the driving snow they made their way, considering the evening well worth all the exertion it had required.

Once inside the cozy manse, David and Carol hastily changed into warm dressing-gowns and slippers, and lounged lazily before the big fireplace, sipping hot coffee and talking, always talking, of the work—what must be done tomorrow, what could be arranged for Sunday, the young people's meeting, the primary department, the mission study class.

And Carol brought out the big bottle and administered the designated teaspoonful.

"For you must quit coughing, David," she said. "You ruined two good points last Sunday by clearing your throat in the middle of a phrase. And it isn't so easy making points as that."

"Aren't you tired of hearing me preach, Carol? We've been married a whole year now. Aren't you finding my sermons monotonous?"

"David," she said earnestly, resting her head against his shoulder, partly for weariness, partly for the pleasure of feeling the rise and fall of his breast, "when you go up into the pulpit you look so white and good, like an apostle or a good angel, it almost frightens me. I think, 'Oh, no, he isn't my husband, not really—he is just a good angel God sent to keep me out of mischief.' And while you are preaching I never think, 'He is mine.' I always think, 'He is God's.'"

Tears came into her eyes as she spoke, and David drew her close in his arms.

"Do you, sweetheart? It seems a terrible thing to stand up there before a houseful of people, most of them good and clean and full of faith, and try to direct their steps in the broader road. I sometimes feel that men are not fit for it. There ought to be angels from Heaven."

"But there are angels from Heaven watching over them, David, guiding them, showing them how. I believe good white angels are guiding every true minister—not the bad ones. Oh, I know a lot about ministers, honey—proud, ambitious, selfish, vainglorious, hypocritical, even amorous, a lot of them—but there are others—true ones—you, David, and some more. They just have to grow together until harvest, and then the false ones will be dug up and dumped in the garbage."

For a while they were silent.

Finally he asked, smiling a little: "Are you getting cramped, Carol? Are you getting narrow and settling down to a rut? Have you lost your enthusiasm and your sparkle?"

Carol laughed at him. "David, do you remember the first night we were married, when we knelt down together to say our prayers, and you put your arm around my shoulder, and we prayed there, side by side? Dearest, that one little fifteen minutes of confidence and humility and heart gratitude was worth all the sparkle and fire in the world. But have I lost it? Seems to me I am as much a shouting Methodist as ever."

David laughed, coughing a little, and Carol bustled him off to bed, sure he was catching a brand new cold, and berating herself roundly for allowing this foolish angel of hers to get a chill right on her very hands.

(To be continued)

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Have you a cold room or two in your house? Rooms that the furnace never seems to heat properly?

A Perfection Oil Heater will bring these rooms back into comfortable use. It will quickly warm an ordinary sized room and starts giving full heat the moment it is lighted.

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See the many attractive models at your dealer's.

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Philadelphia Pittsburgh

ATLANTIC Rayolight OIL

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Here is our New Style E. D. L. Phonograph—the latest improvement—without the horn. The lightest, most durable and compact practical phonograph ever produced. It is beautifully finished, tone arm black japanned, nickel winding crank, accurately constructed, smooth running spring motor, which plays 2 to 3 records at one winding, speed regulator, stop lever and felt-covered turn table. New improved sound box with mica diaphragm, which makes perfect reproductions of all kinds of music—band pieces, talking pieces, instrumental, orchestra, vocal, etc.

Plays Any Disc Record Up to 7 in. and plays them properly. This machine is simply wonderful—not to be compared with any other of this kind. Will give you more entertainment than anything you ever owned. Strong and durable. Small and compact with no parts to get out of order.

EVERY MACHINE REGULATED AND TESTED before it leaves the factory and guaranteed in every way. A real phonograph, not a toy, yet small and light enough to be carried to camps, excursions, etc. Gives a clearness and volume of tone not surpassed by most high-priced instruments.

TESTIMONIAL Cerro Gordo, N. C., Sept. 12, 1918. Dear Company—I have just today received my Phonograph—and must tell you for a fact I am sure more than delighted with it. Many, many thanks for your honesty. I remain your friend till death. Mrs. Fannie Rogers, Cerro Gordo, N. C.

FREE TO YOU—SEND NO MONEY Just your name and we will send you 24 of our Art Pictures to dispose of on special offer at 25c each. Send us the $6 you collect and for your trouble we will send this new improved E. D. L. Phonograph and a selection of 6 records, free for your trouble. You can dispose of pictures and earn this great machine and the records in a few hours' time. Address
E. D. LIFE, 337 W. Madison St., IT9 CHICAGO

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There is a certain feeling of satisfaction in marketing your Raw Furs to the best advantage. Let us give you that sense of gratification that will surely be yours when you receive our check for one hundred cents on every dollar. Values based on unexcelled marketing conditions, liberal assortment, and 30 years of square dealing.

We pay all express and parcel post charges and deduct no commission. *Send for our free price list and tags.*

L. RABINOWITZ, 115-121 West 29th St., New York

Farm Happenings

AS TOLD BY THE BOSS

The mature cows are receiving a liberal allowance of corn stover each day. This is fed during the middle of the day while the cows are out in the yard. Such practice will save a lot of hay and silage, and provides a means of utilizing all surplus stover.

A creep has been made for a number of the pure-bred calves that are allowed some grain. It will pay to give the calves extra care, as they will develop rapidly and pay well for whatever grain they consume.

Most of the brood sows have been bred for spring farrowing. They all have access to a large lot so they may have plenty of exercise. The sows will be fed largely on ear corn and tankage during the winter.

The early winter lambs are doing well. It is important to keep them comfortable and allow them plenty of good, clean feed. If they are pushed during the winter months, they will be ready for the hothouse lamb trade early in March and April.

The young calves are given a small allowance of alfalfa hay each day. It only takes a small amount for a dozen calves, but there is no better place to use it than for young growing stock.

Our oldest cow has been in the beef-breeding herd for over ten years, and has been a regular breeder. She is now being fattened for market. When a cow reaches this age it usually pays to dispose of her on the market.

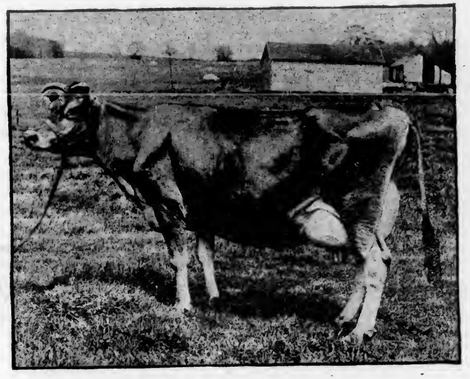
The cattle in the feed lot are doing well. They are consuming more feed than any similar bunch we have fed. They seem to respond well, and are making good gains. Silage, cottonseed meal and hay or stover is a good combination. It keeps down the cost of feed, and results in good daily gains.

National Record Society Benefits Breeders

The annual meeting of the National Society of Record Associations was held in Chicago during the week of the "International." The membership is limited to registry associations recording pure-bred live stock.

The meeting was called to order by Jess C. Andrew, president, who briefly reviewed some of the difficulties which the record associations had encountered in maintaining the purity of their records during the past year, but emphasized the fact that, owing to the memorable decision obtained by the Percheron Society of America, the rights of record associations were now thoroughly defined in the courts and that the officers of other associations were now in a position to exert the heavy hand of discipline upon those members who are unappreciative of their responsibility as pure-bred breeders.

Secretary Wayne Dinsmore presented his report. The chief accomplishment in 1919 was the blocking of the attempt of railroad authorities to reinstate the requirement for an attendant with all shipments of live stock in less than carload lots. This ruling was removed through the efforts of the National Society of Record Associations several years ago, and men in a position to know estimate that it saves the breeders of this country at least $100,000 annually. The railroad authorities had renewed this requirement and it was about to be put into force when the officers of the National Society of Record Associations discovered the danger and by prompt and vigorous efforts blocked the attempt. This is a matter of far-reaching importance to all breeders of horses and cattle, and in somewhat less degree affects swine and sheep breeders as well. The feeling of the representatives present was that the society had rendered great practical service to all pure-bred live stock breeders in this one matter, and that its existence, maintaining a constant and vigilant watch over all legislative and railroad matters pertaining to record associations, was of the highest importance to the record associations and to the breeder members thereof.



Jap's Milla Garfield, a great Jersey cow

Knowing What the Cows do

Eleven new cow-testing associations will be started in Pennsylvania before the beginning of the new year. Official testers made available by the recent short course for cow testers at the Pennsylvania State College have been assigned to organizations in nine different counties. Susquehanna and McKean counties each have two new associations starting, and York, Cumberland, Wayne, Berks, Lackawanna, Union and Bradford will each have one. Other groups of farmers have asked for testers as soon as their associations are organized. This will probably bring the total up to sixty or seventy in the state this winter.

A remarkable impetus in dairy development is noted when this is compared with the number of such organizations a year and a half ago. On July 1, 1918, there were only twenty-one cow-testing associations in Pennsylvania. A year from that date there were thirty-five, and the report for October of the present year gave forty-eight. Pennsylvania is already one of the two or three leading states in dairy improvement. Her dairymen are studying their business from every standpoint to find out how they can lower the cost of producing milk and make their business more efficient. Experience has shown them that the only way to know what each cow is doing with the feed she eats is to keep a close record of the amount of milk and butterfat she produces.

Prize Sheep Dress and Sell Well

The grand champion carload of fat sheep at the recent International was fed by Heart's Delight Farm, Chazy, N. Y., and were sold for $37 per hundredweight. These were grade Southdown lambs, sired by a pure-bred Southdown ram from grade ewes, and were bred on Heart's Delight Farm. The majority were fed from sixty to ninety days, but some of them were in the barns for only a few weeks. The average age of these lambs was 275 days, and their weight at Chicago was 92 pounds each. They were fed a mixture of oats, barley, corn and a little bran, together with clover hay. However, the grain mixture was not the principal element in finishing them, as they were given all the cabbage, turnips and rape they would normally eat, with the grain and hay additional. They dressed 52.7 per cent. of carcass to live weight.

Feeding Hay to Brood Sows

That clover and alfalfa hay are beneficial in rations for wintering brood sows is the conclusion of W. L. Robison, swine specialist at the Ohio Experiment Station. When fed to swine for this purpose, the alfalfa or clover hay is placed in wooden racks low down on the ground so that the animals may secure it easily.

Both clover and alfalfa have given satisfactory results when fed with corn to brood sows. The hay takes the place of a part of the more expensive grain ration, the common method being to give the animals a rather light ration of corn and plenty of hay and a little tankage. If no hay is fed, a somewhat larger amount of grain will be needed.

Brood sows on corn alone usually produce pigs of lighter weight and smaller bones, while those receiving hay and some tankage, as a supplement to the corn, produce strong, vigorous pigs with plenty of vitality. One satisfactory ration tried consisted of fourteen parts corn, one part tankage and what clover hay the animals cared for.

No More Free Serum

Owing to the increased number of hogs in Pennsylvania, which has created a greater demand for serum, and having sold the state farm, upon which was located the serum-producing plant, it is no longer practical for the state to furnish anti-hog cholera serum. In order to afford the swine industry of the state every possible protection and encouragement, the bureau of animal industry at Harrisburg has made arrangements with a reputable firm for supplying anti-hog cholera serum and virus to the bureau in order that it might have it on hand at all times at convenient locations throughout the state. This firm produces a clear, sterile serum, and will supply it to the veterinarians of this state, through this bureau, at 2 cents per cubic centimeter and 1½ cents per cubic centimeter for the virus. The policy of supplying serum to veterinarians only will be adhered to, so that anyone troubled with hog cholera should immediately consult a recognized veterinarian.

Statistical information recently collected by the bureau of statistics, Pennsylvania Department of Agriculture, shows that approximately 20 per cent. or 43,657 farmers in this state are now using silos. The number one year ago was estimated at 32,900.

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STEERS FOR SALE

24 Herefords, weight 1070 pounds; 32 Herefords, weight 970 pounds; 65 Herefords, weight 760 pounds; 95 Herefords, weight 960 pounds; 86 Short Horns, weight 800 pounds; 27 Short Horns, weight 1250 pounds; 28 Angus, weight 1025 pounds; 40 Angus, weight 740.

Also know of others who will help buy for 50 cents per head commission. These cattle are choice quality, good color and dehorned.

HARRY I. BALL, Fairfield, Iowa.

BIG TYPE Poland China Hogs. Fall pigs, both sex, best blood lines, all cholera immuned. Write your wants. Prices right. Public sale of bred sows and gilts. February 12th, 1920.
H. H. Davis, Mt. Victory, Ohio. R.F.D. 1.

"HAMPSHIRES" Bred Gilts for fall farrow; 125 lb boars, pigs any age, free circular
LOCUST LAWN FARM, Bird-In-Hand, Box P, Lane. Co., Pa.

REG. P. CHINAS, BERKSHIRES, C. WHITES, Large strains, all ages, mated not akin. Bred Sows, Service Boars, Lincoln Service Bucks, Grade Guernsey and Holstein Calves. Collies and Beagle Pups. *Send stamp for prices and Circulars.*
P. F. HAMILTON, Cochranville, Pa.

REGISTERED BERKSHIRES Two splendid few pigs, six months old. One fine gilt, bred for spring farrow. Prices reasonable. W. F. McSPARRAN, Furnlss, Pa.

Sheep-yard Sayings from Experience

EDGAR L. VINCENT

Before now I have spent a good deal of time and effort getting sheep through to spring, only to have things go bad at the last moment so that sorry losses came. Ewes never need better care than when the lambs are coming. A few minutes of chilling will often end the life of a promising lamb. For that reason it is well to get the mother sheep in every night when the air is cold or a storm seems to be coming on.

But I had not been keeping sheep long before I learned that it is not best to be discouraged, even when I do find a lamb that is cold soon after it is born. Many times I have saved such lambs by taking a potato crate or a small box, making it partly full of straw, placing a piece of old carpet or some other warm cloth in it, and setting it near the kitchen stove. It pays to lay some warm covering over the lamb. It helps also to chafe the stiffened limbs and body carefully, as this will help to restore the circulation. In the course of a few minutes we may hear a feeble cry, denoting the fact that there is really life still in the lamb. Then have a saucer or other cup of warm milk at hand, and with a spoon pry the jaws open and drop a little of the liquid down the throat. We have had to be very patient about this sometimes. If the lamb begins to swallow and grow stronger, renew the chafing, and if everything goes all right it will not be long before we have a lamb trotting round the room, ready to be returned to the mother—ten dollars saved and a victory won.

But, as a rule, by putting the ewes into the barn a night we may avoid difficulties of this kind. Better spend a few minutes in doing this, rather than have a fight for life with a chilled lamb.

Warmth is the life of the sheep these days. I always like to let the flock out to get the sunshine every day I can. But it is well to be on the lookout for storms and cold winds. A raw wind is about as bad as a cold rain.

Nothing is better to feed in the way of roughage, just before the sheep go out to pasture, than nice, bright clover hay.

It does not injure young lambs to have the boys and girls take them up, if they do it carefully and do not scare them. I like to pick lambs up myself. By doing this we may have them tame enough so that they can be caught later if necessary. Anything but chasing sheep and lambs down as some men do! Better win them by kindness, so that no chasing will be necessary.

I never found any better laxative in the form of grain than wheat bran. Now and then a ration of this will keep the bowels moving freely, and this is a great essential with ewes, especially those that have not yet had their lambs.

A lamb does not need to be very old to take care of itself with the rest of the sheep. Once it is fairly on its feet it will win its way, but that does not mean that it ought to be crowded out and kept from getting the nibbles of hay it likes or its part of the grain that may be fed.

Before now I have seen sheep sipping water out of hoof holes in the barnyard. I knew it must be very foul and impure. It always makes me think that a man that will permit his sheep to take water in that way is not just the man to keep sheep. He does not think enough of them to provide them with pure water.

I like to take the potato parings and any bits of apples there may be from the house down to the sheep. These help to keep them from being constipated. *New York.*

What a Good Jersey Cow Can Do

If one great year's record helps to make a cow famous, then five great years' records should entitle Jap's Milla Garfield to a prominent niche in the hall of fame. One of the notable features of her career has been the steady increase in butterfat production and the making of her best record at nine years and nine months of age. The latest record—17,234.5 pounds of milk and 941 pounds of butterfat—puts her close to the top of the list both as a milk and butterfat producer.

A glance at the pedigree of Jap's Milla Garfield is sufficient to show the source of her producing ability. The imported Jap is her sire. He is one of the eight gold medal bulls of the Jersey breed. Thirty-one of his daughters and three of his sons are in the register of merit. Jap's Milla Garfield is owned by Meridale Farms, New York. Many other Jerseys, famous as great producers, such as Spermfield Owl's Eva, Jap Sayda's Baroness, etc., are her stable mates.

Live Stock and Dairy Notes

Dr. Bernardo Crespo, chief veterinarian of the Agricultural Department of Cuba, recently purchased in Pennsylvania a consignment of ten head of Ayrshires for export to Cuba. This is the second shipment of Ayrshires to Cuba within the past few months.

It is rather significant that on New Year's Day, 1920, the total number of registrations of Guernsey cows should have passed the one hundred thousand notch. On that day there were 100,009 cows and 61,411 bulls in the register. This makes a total of 161,420 animals. During 1919 a total of 18,118 Guernseys were registered. Of these, 7111 were bulls and 11,007 were cows. The total number of Guernseys imported up to the end of December, 1919, was 11,177.

The Barnesville, Ohio, Cow Test Association was organized in May, 1914. Their average per cow has been as follows: First year, 5264 pounds milk, 273 pounds butterfat; second year, 5594 pounds milk, 283 pounds butterfat; third year, 5923 pounds milk, 309 pounds butterfat; fourth year, 5974 pounds milk, 314 pounds butterfat; fifth year, 6729 pounds milk, 346 pounds butterfat.

That dairy farmers should make more use of home-grown feeds during the period of high-priced products is pointed out by the department of dairying at the Ohio Experiment Station after a number of feeding tests with dairy cattle. It is shown that in some cases farmers market their oats at approximately 70 cents a bushel, and buy ground oats in mixed feed again at a much higher price, with additional labor requirements in hauling and handling.

You really ought to have it around butchering time: "The Curing of Meat and Meat Products on the Farm." A postal card request for F 119 to the state college of agriculture at Ithaca, N. Y., will bring you a copy.

The butter industry of the United States is so large that more than a ton of butter was made for every minute, day and night, last year, according to dairy specialists of the United States Department of Agriculture. Yet even this enormous production scarcely meets domestic needs.

The day of the poorly lighted, badly ventilated, dirty and insanitary city factory is past. So is the day of the badly kept milk factory—the cow stable.

If it paid Uncle Sam to keep camp stables clean, it will pay the farmer to keep hog pens, cow sheds and stables clean; and most farmers nowadays realize it.

Do you keep a diary of your dairy? If not, how will you know the difference between the cows you keep and the cows that keep you?

This Holstein holds the WORLD'S BUTTER RECORD, 1504 lbs. butter in a year. Perfect health made her record possible.

Would a Bigger Milk Check Be Acceptable?

All you need do is to pay closer attention to cow **health.** A big milk yield is a genuine health certificate; if the quantity falls off the chances are the cow is suffering from some impairment of her digestive or genital organs—the starting point of nearly all cow ailments.

KOW-KURE is a cow medicine designed to act directly on these vital organs. There is nothing "just as good" for the treatment or prevention of Abortion, Barrenness, Retained Afterbirth, Scouring, Bunches and Milk Fever. For more than a quarter-century it has been used in the most successful dairies. Feed dealers and druggists sell KOW-KURE—in 60c and $1.20 packages. Send for free treatise,

"THE HOME COW DOCTOR."

It gives full instructions on treating cow diseases—should be in every farm library.

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Richest of all concentrated feeds. Now acknowledged a NECESSARY feed on every farm. Write today for lowest price & No-Risk Trial Offer. PHILADELPHIA MOLASSES CO. 1055 Beach St., Philadelphia, Pa.

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NOW READY!—All Material from Our Latest Big Purchases!

Wonderful Roofing Offers

Now is the time to buy roofing. But you must act quickly to get your share of these uncommon savings.

Ajax high grade rubber surfaced roofing in rolls of 108 square feet; complete with nails and cement. **KP-302.**
3 Ply, per roll......$1.56
2 Ply, per roll...... 1.40
1 Ply, per roll...... 1.22

Rawhide Stone faced gold medal roofing guaranteed fifteen years. Rolls of 108 square feet with nails and cement. KP-303. Per roll............$2.25

Famous Rawhide rubber roofing, 3 ply guaranteed for 12 years. Rolls of 108 sq. ft. with nails and cement. KP-304. 3 ply, per roll, $1.95. 2 ply, per roll, $1.80. 1 ply, per roll, $1.45.

Corrugated Metal Sheets

Per 100 Sqare Feet $2.25

28 gauge painted 2½ in. corrugated overhauled sheets 6½ ft. long. KP-306. Per 100 square feet............$2.25
26 gauge painted 2½ in. corrugated overhauled sheets. KP-307. Per 100 square feet, $3.00
24 gauge extra heavy painted 2½ in. corrugated overhauled sheets. KP-308. Per 100 square feet............$3.50

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Never before in our entire career have we been able to place before the buying public such colossal bargains. For more than a quarter century we have successfully completed the greatest merchandising and dismantling contracts in the history of the world. But no other purchase of ours offers the unlimited buying opportunities we are placing before you with this announcement. Bigger, better, greater values in practically everything now await the quick, wise buyer. The following brief outline of camps Doniphan and Shelby are but two of many stupendous purchases, the benefits of which will be uniformly distributed to the people of the nation, in the greatest sale of all time.

Camp Doniphan
At Fort Sill, Oklahoma

With the award of this completely equipped Army Camp, we secured millions of feet of high grade thoroughly seasoned lumber, enormous quantities of doors, roofing, pipe, valves, pipe fittings, plumbing and heating material. We have prepared complete lists of everything we have for sale at this Camp and have stationed our representatives on the ground. *All mail should be addressed to us here at our main headquarters in Chicago.*

Camp Shelby
Near Hattiesburg, Miss.

In securing this camp, we are now able to place before you practically all equipment of one of the largest and finest Government Army Camps. Think of it! Nearly 20,000,000 feet of lumber and wallboard; thousands of closet outfits, heating stoves, refrigerators and heaters; large quantities of electrical apparatus, pipe and practically everything used in a town of 30,000 people. *Address all mail to our main headquarters here in Chicago.*

Mail the Coupon for All Particulars Now!

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Per Reel $2.10

Bought by us at less than the actual cost of manufacture. Finest barbed wire, made under rigid Government supervision. Made of 12 gauge open-hearth steel wire with four point barbs, ⅝ in. long spaced 3 in. apart. Covered with special weather resisting paint. Put up in reels containing 750 feet; weight per reel 58 lbs.

KP-100. 625 reels or more, per reel..$1.80
KP-101. 100 reels or more, per reel.. 1.95
KP-102. 50 reels or more, per reel.. 2.00
KP-103. 25 reels or more, per reel.. 2.05
KP-104 Less than 25 reels, per reel.. 2.10

Galvanized Wire

9 Gauge, per 100 lbs. $3.65

KP-984. New Galvanized Wire, in 100-lb. bundles. Mill ends from regular galvanized fencing wire, same as mill stock but not in continuous lengths. One gauge to the bundle.

9 gauge......$3.65 12 gauge......$4.10
10 gauge...... 3.80 13 gauge...... 4.25
11 gauge...... 3.95 14 gauge...... 4.40

One-Piece Sinks $15.95

KP-6520. White porcelain enameled one-piece roll rim sink and back; two nickel-plated faucets, strainer and lead "P" trap complete.
18 in. x 30 in......$15.95
20 in. x 36 in...... 16.95

20,000,000 Feet of High-Grade Lumber!!

Never again will you have such a splendid chance to buy high grade and thoroughly seasoned lumber. Like all of the material used in the Government Camps, this lumber was purchased under rigid government inspection and is of splendid quality. Sit right down and figure your requirements now! If you can use buildings of any kind, send us your requirements and let us give you the benefit of the savings we have made in these great purchases. Any of the buildings at the camps can be taken down and shipped to you with a big saving. Our complete list includes buildings of every size.

2,000 Complete Buildings!
225 Mess Halls, all sizes
65 Store Houses, size 20 ft. x 98 ft.
95 Heater Houses, size 9 ft. x 35 ft.

All Sizes for Every Use!
200 Power Houses, size 9 ft. x 35 ft.
230 Stables, size 24 ft. x 100 ft.
45 Blacksmith's Houses in numerous sizes

Indoor Toilet $9.95

No Plumbing Needed

KP-1816. Improved Chemical Indoor Toilet, fitted with regular shaped closet seat and cover, finished in birch, mahogany. Cast metal frame and base; steel casing enameled in azure blue. Complete with exhaust pipe and chemicals ready for use $9.95

Harris' Cream Getter Separators

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The Harris "Cream Getter" Cream Separator has made a remarkable record—not a single return, not a complaint. The big increase in sales enables us to offer all sizes at big price reductions. Your old separator taken in exchange as part payment on your new "Cream Getter." Buy on your own terms.

Send first payment of what you can spare with your order and tell us how you can pay the balance.

The same high quality "Cream Getter" with all exclusive patented improvements, including the equal milk distributing sleeve now offered at the reduced prices shown below. Mail coupon for all facts and full explanation.

Order Number	Size Number	Capacity Per Hour	Reduced Prices
X27KP100	x1	x175 Pounds	x$34.50
X27KP200	x2	x250 Pounds	x 38.40
27KP300	3	375 Pounds	52.00
27KP500	5	500 Pounds	55.00
27KP700	7	750 Pounds	64.00
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X indicates table sizes. Ready for shipment from Minnesota, Pennsylvania, Chicago Warehouses. 3% Disc. if all cash is sent with order.

Bathroom Outfit Complete $71.50

Substantial value is offered in this guaranteed "A" grade bathroom combination. ORDER NOW and get the benefit of this unusual saving.

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Your best chance to buy the world's best corn sheller at big reduced prices under most liberal terms with a 30 day free trial and guaranteed satisfaction.

Shells 75 to 125 bushels per hour with 4 to 6 H. P. engine.

Buys the Watts No. 4 Corn Sheller with cleaning system, cob stacker and wagon box elevator.

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The Practical Farmer

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Some Essentials for Success with Potatoes

By J. STUART GROUP

MY twenty-five years' experience as a farmer has showed me that no matter whether we attempt to grow potatoes or anything else, there seems to be something to annoy or pester us in some way. I have, however, no patience with a quitter who gives up or sidesteps when these annoying things happen along. Scab was the thing that bothered me the first years I grew potatoes. My first move was to buy clean seed and treat it with formaldehyde, but my potatoes were as scabby as before. I next tried corrosive sublimate, with the same result. After making a careful study of the potato scab, I learned that it thrived in a sweet soil; also that fresh manure made conditions favorable for the development of the scab spores. Now, we had been using stable manure pretty liberally on our potato ground, and had been using lime to keep the land favorable to clover. Our soil was polluted with scab spores, so it was little wonder I got no good results from the formalin treatment. Last, but not least, I learned that the spores do not develop in an acid soil; also that the yield of potatoes is not reduced because of acidity. Five years passed while we were learning these things. We then were careful to put our stable manure on the potato ground six months or more before planting. We plowed the field in the fall, and sowed rye. Then in the spring, when the rye was about eighteen inches high, we plowed and prepared it for the potatoes. As no scab appeared, we feel sure that the green rye turned under made a sufficiently acid condition to discourage the development of the spores, and since that time we have had no trouble with scabby potatoes.

A ten acre field showing results obtained by the application of methods described on this page

The illustration on this page shows a ten-acre patch of potatoes which yielded 265 bushels of clean marketable tubers per acre, free from scab. The patch is clean of weeds, and no commercial fertilizer was used, as our soil is well filled with humus. (Our method of building up a soil and supplying humus was fully covered in an article which appeared in THE PRACTICAL FARMER about two years ago.) My experience teaches me that the time to destroy weeds is just before they come up; they are weakest just before the first leaves appear above the ground. Therefore, about a week after planting we try to get over them with a spike-tooth harrow. This disturbs the little pests just before they come up, and they can not recover. If the harrow is kept off for ten days or more, they are up, and it seems that most weeds take on a great amount of vigor and vitality if they are allowed to have their leaves exposed to the sun a few days, and they are then much harder to kill, as they will take a new hold and grow if any roots are in contact with moist soil. Our patch is generally gone over three times with the harrow, at intervals of one week, next the cultivator.

We ridge when the tops are about seven to twelve inches high. I find it pays to ridge if the soil is somewhat heavy, but I would not ridge if my soil was naturally loose and mellow; I would merely throw a little ground toward the hills while cultivating to prevent the tubers from being exposed to the light. I have heard quite a few arguments as to how far apart potatoes should be planted. After experimenting with different distances, I found that under our conditions, in north central Pennsylvania, we get the best results by dropping the seed pieces 14 inches apart in the row, and the rows about 33 inches apart. One essential, and a very important one it is, for success with potatoes is good, vigorous seed. I have found, in discussing the seed question with farmers who grow from two to ten acres each year, that not many of them realize the value of the first sprout that starts on their seed. We all know that if the first sprout is broken off, another will grow, but the point I wish to emphasize is that no sprout that comes on a potato after the first one is crushed or removed will have the vigor and vitality the first one had. I had been growing potatoes for six years when I became convinced of the above fact, which I feel sure makes a difference in the yield of fully 18 to 20 per cent. As our seed potatoes were kept in the cellar under the house during those first six years, by reason of the warmth the sprouts would start very early, and the greater part of them would be crushed or destroyed. To overcome this, I decided in 1901 to erect a storage cellar. This was dug into the side of a hill, and walled up, double doors in the front. Here we could maintain a temperature of 34 to 38 degrees during the winter, and no sprouts appeared. Early in April we removed our seed potatoes to the barn floors, where they were spread out thinly so that each potato was exposed to the light. Under these conditions a short, stocky green sprout would develop that was so tough and tenacious that in the process of cutting and hauling to the patch not more than 2 per cent. were broken off or destroyed.

We never cut our seed until ready to plant. I am firmly convinced that the seed should go into the ground as soon as practicable after it is cut. As to depth, we get the seed pieces as near to four or five inches below the level of the field as we can. It positively does not pay to cut the seed into small pieces. Potatoes are the best potato fertilizer there is—a good, liberal seed piece will give the plant a quicker and better start than any combination of commercial plant foods. I usually plant about twelve

bushels to the acre, but if potatoes are low in price I cut the seed pieces as large as they will work through the planter, which takes about twenty bushels to plant an acre. As to spraying, I find I can control the late blight with Bordeaux mixture—5 pounds lime and 5 pounds bluestone to 50 gallons water. Some claim this will also control early blight, but my experience teaches me it will not. I have a four-row sprayer, and I know it does good work, because it controlled the late blight where unsprayed rows left as a check were prematurely killed by the blight.

Any potato grower who does not use bushel crates should get busy and make some. Side slats are 18 inches long, end slats 13 inches, and corner posts 12 inches high. This holds, when filled level, enough potatoes to fill a bushel basket heaping full. I have about 1400 of these crates, and would not do without them. They are especially valuable for storing potatoes. In a season when potatoes rot badly, where the loss in bins was 50 to 75 per cent., the loss in crates was less than 2 per cent. I prefer chestnut to any other wood for crate material, if it can be had.

A Co-Operative Success

CO-OPERATIVE wool marketing was tried in fifteen counties of Pennsylvania last year with surprising results. Over 200,000 pounds of the 1919 wool clip have been handled in this manner, with an estimated saving of from $10,000 to $30,000 to the farmers of this state. In nearly every case the difference in price received by those who sold their wool collectively and those who sold individually was from 5 to 15 cents per pound in favor of collective selling. In two counties, McKean and Lawrence, the county sheep and wool growers' associations handled the business. Under their direction the wool was collected at a central point and stored. Through the county agent and W. B. Connell, animal husbandry extension representative from the Pennsylvania State College, a qualified man was obtained who sorted the wool into eight recognized market grades. The classified wool was then offered for sale by the sealed bid plan and disposed of to the highest bidder.

The McKean County Sheep and Wool Growers' Association sold 15,346 pounds of graded wool for $9717, while the Lawrence county organization handled a total of 31,280 pounds of graded wool, which brought $21,573.67. In other counties the farmers, with the aid and advice of the county agent, pooled their wool. In some cases this was sold right in the counties before shipment; in others it was consigned to commission houses in Philadelphia and Wheeling. It was found that graded wool especially appealed to the buyers, and that in the case of ungraded wool the poorest set the price. When the wool is graded the buyer can see what he is getting, and the farmer receives an honest price for what he has to sell.

More than 1300 members of the clergy who are in small towns and villages have been invited to attend the conference of village ministers which will be conducted in co-operation with the Cornell University Christian Association and the Ithaca, N. Y., churches from February 9th to 12th, during Farmers' Week. The different sessions will be focused upon the work and problems of the ministers of village churches in New York state. Cornell problems are closely related to those of village churches.

Agricultural Notes from England

F. W. BALDERSTON

[This is the first letter we have received from Mr. Balderston, secretary of the Interstate Milk Producers' Association, who is on his way, with a party of Friends, at the request of Mr. Hoover, to help feed the German children. We hope to have letters regularly, telling something of what he sees and does.—EDITOR.]

ONE cannot get more than a cursory impression of agricultural conditions in England during a one-week stay—and that largely in London. There are some important observations that have been made to me, however, by men I have met here.

First, the country is actively discussing the question of a post-war agricultural policy. A recent commission brought in a majority report advising the government to subsidize, or, rather, guarantee a profit to, certain classes of producers, who could, and would thereby be expected to, increase the local supply of foodstuffs. The minority report declared for a hands-off policy, with the farmers playing safe and thereby to some extent—how much they do not yet know—producing less, though on a safer margin. The *London Times* of December 29th says it is in any event a consumers' problem—the farmers are going to play safe. Talking with such well-informed people as I have met, one thing is certain, the present government maximum price of butter (2½ shillings) is driving all the English butter dairies out of business. This may be what the government wants to do, for it is largely interested in the margarine trade. We get butter sometimes, but the supply is meager. At the present rate of exchange this price would only mean about 50 cents in United States money.

Milk is scarce. We see it doled out to families according to certain regulations. We get condensed milk and water on the tables for our "porridge" and coffee. Milk retails at 1 shilling a quart—now equal to about 20 cents. The usual method of delivery is from hand carts, which contain a big can with a spigot and a number of small tins for individuals. There are very few bottles to be seen. The milk costs 1 penny (2 cents) extra served that way. Some aspire to a pony or donkey cart, but most do their own pushing. The milk comes from the farms in big cans which hold sixty-eight quarts, and look like great milking-machine pails with a tight lid that hinges on. They are called "churns," and no wonder, for they are the shape of the old-fashioned churn whose dasher was plunged up and down. The milk is received twice a day from the country at central pasteurization plants, from which it is distributed to branches from which the pushcarts go out into the surrounding streets. One pushcart can apparently serve about 200 quarts per day or more, making the double delivery.

I have seen very little of the country end of the business, but the green grass pastures are well cared for, and the stacks of hay give evidence of an abundant crop last year. The grass is still green in this part of the country, and many fields have sheep, calves and horses in them. The milk cows are kept carefully housed and tended, being fed on hay, roots, some grain and imported cake meal.

I take off my hat to the London "Bobbies," who are the finest policemen I know. I enjoy the clean streets and the tubes which whisk us to our destinations in short order. The busses on the streets are convenient for slower trips, and very cheap. They get about readily, and don't block the highway like trolleys. There are very few surface "trams" or trolleys in the city. There are no high buildings, and very little present-day building operations going on. There are very few private automobiles. Gasoline is too high in price—three times our United States price. Plenty of horse-drawn vehicles are to be seen, and the horses are much better bred and better cared for than in Philadelphia and New York.

We look with mild interest on the horse guards which are mounted around Buckingham Palace in their gorgeous array, and on all the trappings of royalty around the many castles, and smile, for, after all, it means but little to the real government. There is much simplicity about the quarters of the real government of the British Empire that makes many state governments in the United States look sumptuous in comparison. The American embassy is, however, housed here in a very modest house on a quiet though aristocratic square.

Tea at 4 P. M. is a function that we smile at privately, and yet gracefully accept. All business stops for it. Every office has its equipment for making the beverage, and its crackers and cake tins.

One day I visited the extensive lime quarries near Oxted in Surrey, where the chalk of the "downs" is burnt for building and agricultural purposes. It is such soft rock that it can be gotten out without much labor, and seems to make good lime. Much is used locally by the farmers without burning, because the frost breaks it up very satisfactorily when spread out on the surface of the fields.

We leave tonight for Holland and on to Berlin. The Imperator—the boat on which we came over—was slow, and that delay threw us into the Christmas season here. We are therefore leaving at the first opportunity after geting our affairs in shape here. We have been here just a week.

London, December 29, 1919.

The farmer who gives his farm a name will become more attached to and interested in the place. It gives him pride and a sense of dignity when he refers to his home as the "Oak Brook" or "Pine Crest" farm, as the case may be, repeats the Pennsylvania Department of Agriculture. He will take more pride in the appearance of the farm and the products it produces. A farm home may be known far and wide by some significant name, and a farmer should awaken to his opportunity. In connection with farm name, the farmer should use printed letterheads and envelopes, as it will give publicity to his farm and is a business expedient that all practical business men are pursuing. The typewriter is coming into general use, and keeping of farm accounts is being recognized as a business necessity.

With high priced land, labor and seed, efficient methods must be employed. A modern potato planter soon pays for itself by the increased crop it assures

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FEBRUARY 1, 1920

SEVERAL readers have asked me how many letters I have received, in response to editorials I have written for this page during the past few months concerning the Victorious Life, asking for the booklets I offered free. I'm going to answer that question here, so that not only the inquirers, but all my readers, may know, and perhaps can help answer a question I'm going to ask. I have had just 106 requests for Victorious Life literature.

Now here's *my* question: Are all the *rest* of the many thousands of PRACTICAL FARMER readers already enjoying the Victorious Life; *or* don't they want a life of victory; *or* have I told about it so badly that they didn't understand, or were not attracted by, it?

While none of us can answer that question for all, or any great number, of PRACTICAL FARMER readers, each can answer it for at least one. If, answering the first part of the question for yourself, you are enjoying a life of Victory in Christ, I join you in praising God for it, and I'd like to know you and congratulate you, for I'm learning that it's the one life worth while. If, answering the second part, you think you don't want a life of Victory in Christ, I wish I could tell you what a mistake you are making—how much you are missing—as I know from my own personal experience. But if, answering the third part of my question, my faulty presentation has not made attractive to you the life of victory and that is the reason for your not seeking more light on it, perhaps right here I can clear up that difficulty.

If you have thought of the Victorious Life as a new cult or a new religion, you are laboring under a misapprehension which should be corrected at once; the Victorious Life testimony is orthodox—a part of "the faith once for all delivered to the saints". You will remember our Lord Jesus derived his name from the fact that "He shall save His people from their sins", and in His life and death and resurrection He not only offered "His people" *salvation* from the *penalty* of their sins in the life to come, but *victory* over the *power* of sin in the present life; He said this Himself, and it was understood and reiterated by St. John, St. James, St. Peter and St. Paul; it was the teaching of the Church of the New Testament days, but in the latter days we seem to have forgotten it. The Victorious Life is not a denominational movement; it is broadly interdenominational; it is just *the life that is Christ*—so how *can* it be narrow or bigoted?

Many of the letters I have received have breathed an earnest Christian spirit but have told of a longing for something deeper and more satisfying in the writers' daily lives than they had yet experienced—in short, they crave victory; but almost invariably each such letter has told also of defeat in a long and earnest struggle against sin, and the writer has expressed the conviction that victory was not for him—or her. Well, as long as you and I *struggle* for it, friends, victory over the power of sin certainly *isn't* for us! For victory, like salvation, is a free gift—it can't be won; it's a matter of grace, not works. If *we* could conquer sin ourselves the wonderful sacrifice of the only begotten Son of God was useless—vain. God freely offers us victory in the person of His Son, our Lord Jesus Christ—for victory is not a thing, it is a Person, you see.

And what is *our* part in this victory? Why, certainly not to struggle over it or doubt the sincerity of the giver, but *just to accept it*. But if we are going to accept this gift—which is just Himself, you know—and take Him into our heart and life, we must understand of course that He is to have our *whole* heart and our *whole* body for His habitation—He won't share either with "the world, the flesh or the devil". That means surrender of our minds, our wills, our ambitions, our bodies, our substance—everything—to His blessed purpose and guidance—withholding nothing, "presenting your bodies a living sacrifice, holy, acceptable unto God, which is your reasonable service."

And having surrendered—having "let go and let God"—there's nothing more for us to do, nothing more we *can* do—*except* one little thing; but that one little thing is a stumbling block to many. Having put our life, our all, in His keeping, we must *believe* in His faithfulness, in His sufficiency for all our needs; having accepted the free gift of victory, we must *believe that victory is ours*. Several of the letters that have come to me have shown plainly that the writers were living surrendered lives, but plainly stated that they were not enjoying victory; they were suffering the penalty imposed on the people of Jesus' own country where "He did not many mighty works because of their unbelief" (Matt. 13: 58). If you want mighty works in your life, don't forget to both surrender *and believe!*

The Victorious Life is a life of victory over sin, a life of joy and freedom from worry, a life of constant fellowship with God, a life of fruit-bearing. Do you have this life? Do you feel the need of it? If you want to know more about it I'll be glad to send you several helpful booklets on the subject if you'll ask me. If you've already had some literature but want more, please tell me what you've had so I won't duplicate it. If you have any specific questions you want to ask I'll be glad to answer them if I can.

EDWARD T. WALKER.

Farmers Meet and Conquer

PENNSYLVANIA agriculture has made its impression on the authorities at Harrisburg. For a long time it has been a favorite theme to expound upon and laud to the skies, but until the farmers themselves met at the state capital for four days' conference, January 20th to 23d, it lacked concrete evidence. Indeed, even the governor himself thought other business calling for his presence was more important than addressing a handful of lukewarm farmers, and would doubtless have failed to appear before the gathering if the secretary of agriculture had not convinced him that it was not that kind of an audience waiting for him; on the contrary, the largest auditorium in Harrisburg was filled to the doors with men and women right from the farms in every county of the state, and after the governor had delivered his message and seen and felt the enthusiasm, he confessed to the secretary that it would have been a great mistake to miss such a stirring occasion. This was the feeling on all sides during the meetings of the twelve state organizations, the state departments of agriculture and education and the authorities at State College, who co-operated by placing their efficient teaching force at the disposal of the meetings. This was the first time for many years that such close co-operation has existed between all the forces in the state having to do with the advancement of agriculture, and great hopes are held for future developments. One thing everybody regards as essential is a great building or hall where gatherings of this kind may be held; otherwise it will be necessary to hold them in a larger city, such as Philadelphia or Pittsburgh. This year the exhibits of farm products, vocational schools, boys' and girls' club work, State College extension work and commercial devices of many kinds completely swamped two of the largest available places in Harrisburg and made much confusion which better accommodations would eliminate.

An Expensive Experiment in Politics

ALL of us read with interest the wonderful claims made by the Non-Partisan League of North Dakota, and have been waiting with curiosity a report as to just what its permanent success would be. You will recall when the league was stripped of all its embellishments it was nothing but an experiment in radical state socialism. The promises made by the promoters of the scheme appealed so to the farmers, who were largely in the majority in North Dakota, that the plan spread like wildfire, and for a while farmers fell all over themselves to pay the sixteen dollars which represented the price of admission. With the resulting vast amount of money attempts have been made to establish the league in certain eastern states, but so far they have been unsuccessful, to the great credit of the men and women who are on the farms and take time to reason things out before they part with their money. We know when the state begins to do things for the benefit of its citizens, instead of having the so-called utilities owned and operated by private capital, somebody has to pay the bills, and they will be big ones. When the farmers of North Dakota get their tax bills they will clearly see the truth of this, and much of their former enthusiasm will be lost. Many specific instances of this kind were presented by Floyd R. Todd, a prominent manufacturer of agricultural machinery, in an address he gave recently in New York at the Agricultural Publishers' Association. He read from county records in that state of tax increases between 200 and 300 per cent., and said that such statements would be real news to North Dakota farmers, as they have not received their tax bills yet. Assessed valuations in some cases between 1916 and 1919 have been increased 548 per cent., while the tax paid for the same period is 182 per cent. Just what the result will be when these facts are generally known in the state and their significance and bearing on the league's experiment realized, it would be hard to say, but surely it would not be human nature if a great deal of resentment is not felt toward it, and possibly the Non-Partisan League is doomed. One of the greatest difficulties in combating the growth of the league in North Dakota has been the inability to reach the people with the truth about it. While farmers are proverbially known as giving matters serious thought, it is not possible to get fair judgment when only one side of a question has been presented. The tax bills now speak louder and will bring quicker results than the most polished orator, but it is a high price to pay for something which started on the wrong premises. The results, though, will go a long ways toward blighting any chances the league may have had of gaining control in any other state.

Bulletin Helps for Farmers

"Growing Beef on the Farm" is the title of Farmers' Bulletin No. 1073, and covers, as completely as can be done in twenty-four pages, this important industry. It tells not only what kind of cows, sires and care are essential to get a herd of beef animals, but devotes considerable space to feeds and rations. For the man thinking of trying the beef proposition this bulletin has many valuable pointers.

Growing the Early Garden Plants

W. F. MASSEY

It takes a good while and a great deal of care to get the earliest tomatoes in your locality, but every true gardener takes a great deal of interest in getting the summer vegetables ahead of his fellow gardeners, and the labor is simply a stir to his garden enthusiasm.

As to the time for sowing the seed, that depends, of course, on the climate. A good rule is to sow the seed ten weeks in advance of the time that the plants can be set in the open ground. Here that means the first week in February. I sow the seed in a shallow box or flat, as gardeners call these boxes, three inches deep. In the absence of the greenhouse you can sow the seed in a similar box in the sunny window of a warm room. Or, having sashes and frames, prepare a hot bed, and sow in that. A very small hot bed will start plants enough to take a great deal of room in cold frame, where they must be transplanted to get stout and to harden off for transplanting to the garden.

Seed sown in a hot bed and let grow rankly and thickly, with a great deal of stem and very little root, are only worth throwing away, instead of setting in the garden. If you cannot have the cold frame, you had just as well not attempt the early tomatoes. When sown in the sitting-room window, you can transplant them to other flats, setting deeper and giving more room, till you have plants four or five inches high. Then if you have no sashes nor cold frame, you can make a rough frame of boards, on edge, a foot wide, and bank around outside and cover with twilled cotton, and set the plants four inches apart each way. Then by stripping the cloth off on warm, sunny days and giving some extra cover on cold nights, you can get good, strong plants and get them hardened so as to transplant easily. The fact that the plants are comparatively hardy will be shown by the stems getting a dark purplish tint, rather than the tender green. These plants can be lifted with a garden trowel, retaining a mass of soil, and then set in holes prepared, into which water is poured and the plants set in it at once and the earth drawn in. I set them this way every spring, and seldom have a plant to wilt at all.

The more the plants are transplanted before going to the garden, the better the plants and the earlier the fruiting. Sowing the seed in the flat in the greenhouse, I transplant them as soon as they are large enough to handle, even in the seed-leaf state. I set them two inches apart in similar shallow boxes, and when I have little, well-developed plants three inches high I set them in 2½-inch flower pots. From seed sown the first week in February this will bring us to the first week in March. After the middle of March and up to end of the month it is safe to set them in a cold frame four inches apart. There I expose to the air at every favorable occasion, closing early in the afternoon. Finally the sashes are left open night and day, unless there is a sudden change to colder weather. The plants are usually short and stout stemmed, showing bloom or even green fruit, and by the 20th of April they go into the garden. The earlier we get them out and live, the earlier the ripe fruit. Hence I take some risk, for we are liable to a reverse, and may catch a frost even in May.

Therefore I always try to have a surplus number of plants, for there are always people wanting to buy them. This surplus is kept in the frames as a resource in an emergency, and I never let anyone have a plant till I am pretty well assured that mine outside are safe. Still, I do not abandon the outside plants even if frost threatens. In that case I have a lot of cardboard protectors, conical in shape, like little tents. These are set over the plants, and banked all around with soil to prevent blowing off. Formerly I practiced laying a wisp of hay on a plant after turning it down carefully, and then shoveling earth over them. I have in this way carried tomato plants through a cold wave that went down to 21.

If I was growing tomatoes for market I would use a good strain of seed of the Earliana, and at same time have plenty of plants of the Bonny Best to set at same time. The Earliana throws its whole crop almost at once and is done. The Bonny Best is but a little behind it, and is a far better tomato, and will keep bearing for a long season. In field culture it is common to let tomato plants take their natural habit on the ground. In the garden it pays well to take the plants and train to single stem. I set stakes six feet tall in rows three feet apart and two feet apart in the rows. A plant is set on the south side of each stake, and the plants are tied to the stakes as they grow, and all side shoots or suckers kept pinched out. This gives more plants in the same space, as the plants tumbling on the ground need 4 by 4 feet space, and will give earlier fruit and much more of it.

When I take the tomato plants out of the frames, I at once sow in the frame seed of later varieties to make plants to come in as the earlier ones are failing. Spraying frequently with Bordeaux mixture is essential, for otherwise the plants will soon be dropping their lower leaves, till by the time the crop is well advanced there will be only a tuft at the top and the later fruit will be of little value. This leaf blight is everywhere, but can be controlled, while the bacterial blight that infests southern gardens cannot be managed.

In my own garden I use no early tomato but the Bonny Best, as I am willing to wait a day or two rather than use Earliana. For the later sorts I use Success, Globe and Puritan Hill.

EGG PLANTS

Sow seed of the Black Beauty the last of February. I sow these in the greenhouse in flats, just as I do tomato seed, but do not sow so early, for I do not try to harden off the plants in a cold frame, as they are more apt to get stunted, and a stunted egg plant is poor stock. I set the plants as soon as large enough in 2½-inch pots, and when they have pretty well crowded the small pots with roots, transplant them to 4-inch pots, and grow on in the greenhouse till the leaves are as large as my hand and the soil outside is warm. That is early in June. Then they are planted in the richest soil at hand, and treated to side dressings of nitrate of soda to push them into rapid growth. They are regularly irrigated, for there is no garden plant that needs more moisture in hot weather.

CABBAGE PLANTS

Succession cabbages to follow the Wakefield, sown in the fall and set either outside or wintered in frames, should now be sown in a cold frame. The Copenhagen Market is a good variety for this crop, and some seed of the Brunswick sown at same time will make good fall cabbages in September.

If not sown in January, you can still sow seed of the Prizetaker onion for transplanting in late March or early April.

LETTUCE PLANTS

Sow seed, in a frame, of the Hanson and Wonderful lettuces to make plants for setting in the garden early in spring. These are better than the Big Boston for spring setting, as they do not run to seed so quickly. Some seed of the Grand Rapids lettuce can also be sown in a frame and let remain and grow for the earliest leaf lettuce.

MELONS AND CUCUMBERS

Of course, the planting time for these is a good way off, but it is well to take the hint from the market men, who prepare their ground here in January or February, mark out the hills for watermelons, cantaloupes and cucumbers and get the manure in, letting it lie and rot till April.

EARLY PEAS

I try to get in the extra early peas the first opportunity that the soil can be worked after the middle of January. For this crop I use the Nonpareil, which belongs to the Alaska type. I also sow some Thos. Laxton and Sutton's Excelsior to immediately follow the Nonpareil. The later peas of higher quality and wrinkled seed I do not sow till March and up to last of that month in succession, Telephone and Longfellow, the last the best of all late peas. I grow these late tall peas on my woven wire fences.

Cutting Out Peach Borers

Peach tree borers, the most destructive insects in peach orchards of eastern United States, are best controlled by worming, or cutting the grubs out of their burrows with a sharp knife in late fall and early spring. Entomologists at the Ohio Experiment Station say that nearly all sprays and washes, as well as all mechanical protectors and barriers, are of doubtful value, some not paying for the cost of their application and others being positively injurious.

During the winter the insect lives as a larva in a deep burrow under the bark of the peach tree a few inches below the soil level. With the warm days of early spring it feeds upon the tender growing tissues beneath the bark, causing the tree to become sickly and unproductive and often to die if a sufficient number of borers infest it. By early summer they construct cocoons, and in about nineteen days emerge as adult moths. These parents are clear winged, and resemble certain blue wasps. Although the female lives only four or five days, she lays about four hundred fertile eggs in this time, and from these the larvae hatch in eight to ten days, or about July 1st to August 30th.

To kill the borers, remove the soil, when not frozen, from about the base of the trees. Exuding gum and "sawdust" will show the location of the larvae, and thus they can be cut out with a sharp knife or probed with a wire. The earth should then be replaced around the tree and left until the middle of September, so that eggs will not be laid again in the formerly infested portion.

A spray of one gallon of commercial lime sulphur to eight gallons of water, with a pound of arsenate of lead paste and a little lime added, has reduced the number of borers when carefully applied in early June to the tree trunks and large branches, again in mid-July and later in early August. However, it, like other sprays, has not been a complete remedy in experimental spraying tests against this peach enemy.

Decay of Trees

Whenever the limb of a tree is blown off or becomes diseased the stump should be sawed off even and painted with creosote or tar paint; otherwise decay will set in and spread to other parts of the tree. Oftentimes even a nail hole will so injure the bark that it will come off, leaving the wood underneath unprotected. If these spots are left bare, decay will set in and seriously endanger the tree. A coat of creosote or tar paint will prevent spread of decay, and gradually the bark will grow over the bare place.

New Jersey Produces Good Seed Potatoes

The field shown on page 42 is being planted with a second crop of Irish Cobblers, to be used for seeding purposes. For two reasons this field was planted with special care. On the one hand, it was to undergo inspection by the state agricultural department for certification, and on the other, the value of crop and ground and the present high cost of labor made a high degree of efficiency necessary in order to assure a proper profit. Efficiency in this case meant the avoidance both of "misses" and "doubles" by using a planter. Missed hills would reduce the quantity of product and set at naught the labor which would be consumed in the plowing, harrowing, cultivating, spraying and digging of those unproductive hills. "Doubles" would, of course, affect the uniformity of size.

Seed potatoes grown as a second crop and dug when immature are rapidly increasing in popularity with the New Jersey growers. Great progress has been made in the production of this home-grown seed which replaces the highly expensive Maine-grown potatoes. The yield is fully as good or better than that obtained from northern seed. The germination is slower, but the stand is usually much better.

Most farm machinery is more worn by rust than by use.

Earlier Maturity Paid for the Fertilizer

Read what Mr. C. C. Sorenson, a progressive Wisconsin farmer, says:

"I increased my yield of potatoes 75 to 100 bushels per acre and improved the quality, by using one-half ton per acre of a good grade of fertilizer. The crop matured a week to ten days earlier and the difference in price between September 20th and September 30th last year more than paid for the fertilizer."

Mr. Sorenson is a regular user of

A·A·C· Fertilizers

because they produce big yields of quality potatoes and other crops. They supply the right amounts of ammonia, phosphoric acid and potash, derived from the best plant food materials. They help to give a quick start, rapid growth and early maturity. There are special A. A. C. Fertilizers for the different farm crops.

We can help you to select the right fertilizer for your requirements. Tell us the crops you grow and the amount of fertilizer you expect to use. We will gladly send you our 56 page book *"How to Make Money with Fertilizers."* Write today.

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ATLANTA, BOSTON, BALTIMORE, BUFFALO, CHARLESTON, CINCINNATI, CLEVELAND, COLUMBIA, DETROIT, JACKSONVILLE, LOS ANGELES, MONTGOMERY, NEW YORK, PHILADELPHIA, ST. LOUIS, SAVANNAH, ETC.

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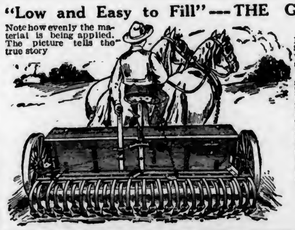

Note how evenly the material is being applied. The picture tells the true story

Imagine a GIANT of POWERFUL STRENGTH, then you have a mighty good vision of the new GUARANTEE LIME and FERTILIZER SPREADER.

Consider, please, the superior features, such as the harrowing attachment, super-feed, shifting clutch and spreading device. For durability, simplicity and practicability, gentlemen, there never has been a spreader to equal her, for spreading lime, ground limestone, commercial fertilizers, etc., EVENLY, or if you so desire she will sow in rows at a moment's notice. She works with ease, but what I like about her most is the sturdy way she is built. Place your order early to avoid the rush. You can save $15 by being the first one in your county to purchase a GUARANTEE SPREADER. BETTER WRITE US TODAY. Thank you.

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43 years' experience in originating, testing and growing vegetable and flower seeds is behind Maule's Four-Leaf Clover Guarantee. *All* Maule's seeds are *tested* for growing power which means *big crops* and *beautiful flowers*.

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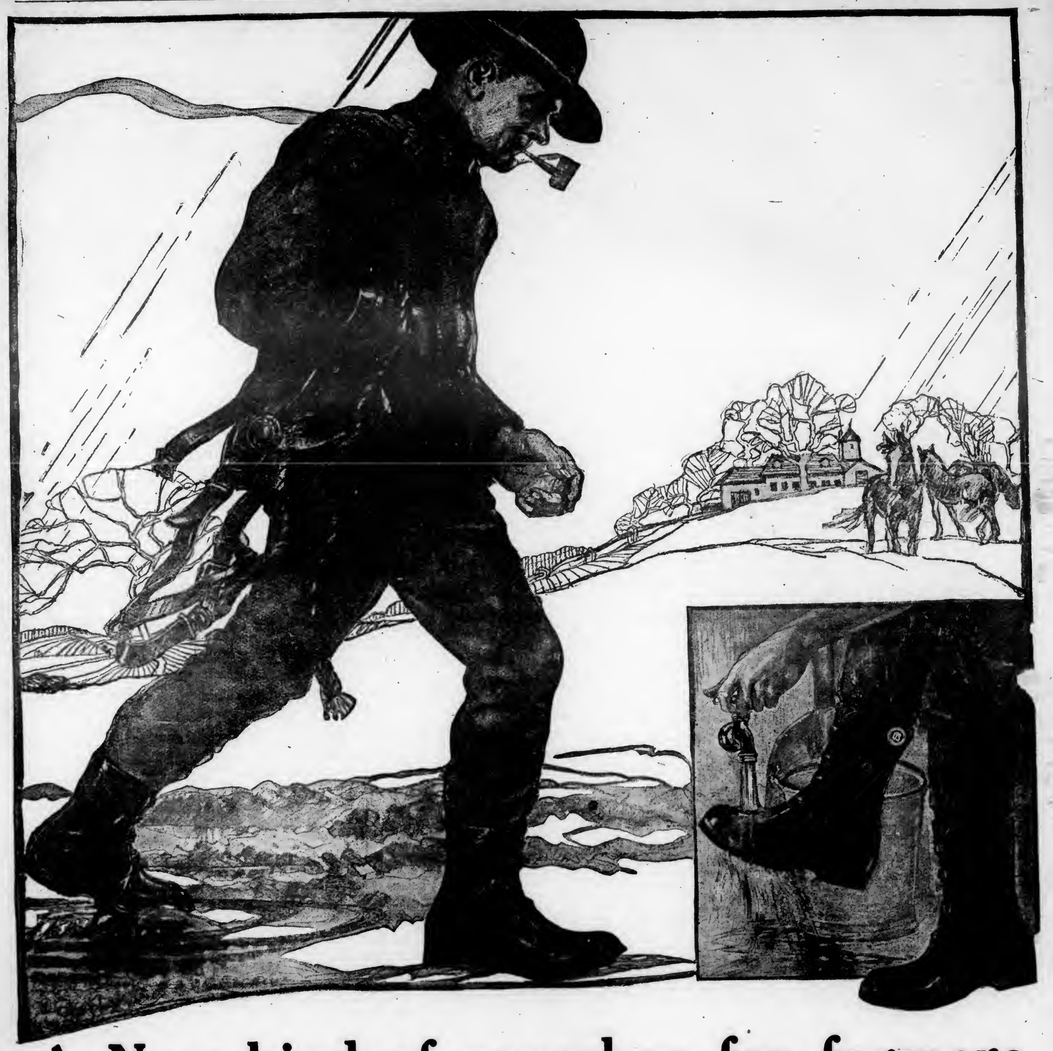
STRAWBERRY Plants, 100 early to late $1.00, postpaid. Catalog of Plants and Trees free. L. G. TINGLE, Box 80, Pittsville, Md.



A New kind of overshoe for farmers

The new "U. S." Walrus: clean and water-tight as a rubber boot—warm and convenient as an arctic

HERE'S an overshoe that gives you the *best* points of the arctic combined with the *best* points of the boot. It's called the U.S. Walrus—don't forget that name! This new overshoe slips on and off easily over your leather shoes. Its warm, fleecy lining keeps your feet comfortable in the coldest weather. And its smooth rubber surface washes off as quickly and cleanly as a boot

No matter where you've been working—no matter how caked with mire it is at the end of the day—just hold the U. S. Walrus under a faucet or a pump and *swish!*—it's clean!

The comfort and convenience of this new overshoe are backed up by real strength. Made by the oldest and largest rubber manufacturer in the world, the U. S. Walrus is *built to last.* Its sole consists of heavy layers of the finest rubber. All other points of strain are specially reinforced.

Ask your dealer today to show you the new U. S. Walrus. Note the warm lining—the smooth surface—the strongly-reinforced construction. After you've worn a pair for a day or two, you'll realize why they're fast becoming so popular with farmers everywhere.

Other "U. S." models—all built for the hardest wear

Whether you prefer a boot for the wet season, a bootee or rubber for general use, or a cloth-top arctic—you can find in U. S. Rubber Footwear exactly what you need. Tough, heavy soles—special reinforcements at toe and heel—and *always* the highest quality rubber—these points are winning U. S. Rubber footwear thousands of new friends every year.

Ask for U. S. Rubber footwear—it means solid wear and long service for your money.

"U. S." Boots—Are made in all sizes and styles: Short, Storm King, Sporting, and Hip. In red, black, and white.

"U. S." Boots—Reinforced where the wear is hardest

1—**The sole**—Five soles in one, all of the finest rubber and fabric.

2—**Back of the heel**—Every step you take puts a strain on the seam in back. At this point every U. S. Boot is reinforced with *ten thicknesses.*

3—**The toe**—won't break through like the toe in so many boots. It has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.

4—**The "bend" in front**—A boot has no lacing in front to "give" as you walk. Every mile you cover the rubber there bends and buckles 750 times. Six heavy thicknesses give long wear to U. S. Boots at this point.

"U.S." Bootee—Worn right over the sock. An all-rubber surface, easily washed off. Absolutely water-tight. Hy-Bootee, six eyelets; Lo-Bootee, four eyelets. In red, black, and white.

"U. S." Arctics—Made of snow-tight cashmerette, warm and comfortable. Reinforced where the wear is hardest. In one, two, four, and six buckles, all weights and sizes.

Ask for "U. S." RUBBER FOOTWEAR

United States Rubber Company

Field Notes

A. E. GRANTHAM

In an address before a farmer audience recently a member of congress stated that it was a common notion among farmers that when they were out of debt they did not need money. In other words, when these obligations had been met they were, in the main, content to get along with such improvements as already exist, rather than go farther and put in those appliances and equipment which make life on the farm easier. This statement is, in the main, correct, since the farmer after struggling fifteen or twenty years with a mortgage hesitates a great deal before he incurs a similar obligation which would be a burden. In our experience we see many farms that are handled in this way. The family has done without those necessities of life in the way of modern home for the sake of paying off a debt, and after the struggle which has lasted so many years they do not feel that they can afford to make a similar venture. This speaker stated that going into debt on the proper basis was one of the best investments a farmer could make. On the farms as elsewhere, money or credit is required to carry out the operations, and many a man loses because he does not have sufficient credit or money to embark on a paying scale in these new enterprises. The doing without the necessities of life has had its effect on the younger generation. The boy who for twenty years of his life has done without the conveniences in the farm home is not likely to look upon such a life as one he cares to follow. This perhaps is an explanation of why so many young people leave the farm at the present time.

In the Middle West especially, special inquiries have been made concerning the value of spreading wheat straw on the wheat fields during the winter. At the present time there are several makes of machines designed particularly for the spreading of straw. Some experiments at the Ohio station have shown that an excellent stand of clover can be secured by top-dressing the wheat during the fall or winter with a light coating of straw. While the straw may not be of much direct benefit to the wheat so far as increased yield is concerned, yet the mulch afforded by such a covering retains the moisture in the spring, so that the clover makes a much better start than when seeded on the bare land. Straw may be spread at any time during the winter, providing it is applied long enough ahead of the seeding of the clover that it may become packed down somewhat by the rains so as to form a more or less compact covering over the surface of the ground. Unless the straw is quite thick, no harm can come to the wheat, since the straw permits the access of light and air. Where the winters are quite severe the mulch of straw during the fall or winter may afford some protection to the wheat from the low temperature.

This practice is well worth trying, particularly if it is not feasible to work all the straw on the farm through the barn or feed lots.

An examination of corn at the winter corn shows brings forcibly to mind the necessity for the proper feeding of the corn crop in order to get a good yield of high quality. High yield and quality are dependent upon two factors—selection and breeding on the one hand, and feeding on the other. It is impossible to get corn of show quality unless the crop is provided with a proper balance of plant food. In no other crop does the lack of potash and phosphoric acid show its effect more markedly than in corn. The maturity and soundness of the grain is directly dependent upon the available supply of these elements of plant food in the soil. At the recent Indiana State Corn Show the large yields per acre were invariably grown by the use of some commercial fertilizer. The winner in the five-acre contest for 1919 grew 118 bushels per acre as an average for five acres. This was grown on an alfalfa sod twelve years old, this being the second time it had been in corn since the sod was turned under. A fair amount of commercial fertilizer was used even on such soil and with good results. Twenty-four farmers in the state grew more than 100 bushels per acre on five acres. A significant feature in this contest was the fact that most of these winners were from those counties of the state not considered strictly corn-growing areas. This indicates clearly the value of commercial fertilizer in supplementing soil conditions for getting a maximum yield of grain.

During the farmers' short course at Purdue last month there were displayed some photographs showing the work of the Illinois station on the variation of types of corn with reference to resistance to disease. The high-protein corn was far more resistant to certain new diseases to which the corn plant is subject than were the low-protein types of grain. Any corn grower can easily determine by inspection those ears which are high in protein as compared with those that are low in protein or high in starch. This is generally indicated by the large proportion of horny or glassy endosperm in the kernel. By holding a grain of corn between the eye and a window, one can easily detect the proportion of glassy endosperm which carries the bulk of the protein. That portion of the grain which is not translucent and through which the light does not come contains the germ and the soft starch. Experiments at this station in the past have shown that the high-protein kernels make the best yield, owing to their high content of nitrogen, and are much more resistant to unfavorable weather conditions than the starchy kernels of low protein.

It's the extra loads that pay the profit

WATCH the man in your neighborhood who makes the most money from his corn crop. He knows how to get big yields. Every year he puts a few *extra* loads into his corn crib and those *extra* loads pay his profit.

You must have a fertile soil to get big yields. There must be ammonia to give the young plants a quick start. There must be phosphoric acid to grow strong roots in the Spring and to make hard ripe corn in the Fall. There must be potash to make sturdy stalks and to fill the ears.

Fertilizer supplies quick-acting plantfood. When there is no manure, extremely profitable yields of corn can be grown with fertilizer alone.

When manure is short, spread it thinly and use fertilizer to make up the shortage. When there is a good supply of manure, use fertilizer to furnish the phosphoric acid that manure lacks, and which is needed for well filled grain and early maturity.

"High Analysis" Fertilizer for Corn

One of These Will Fit the Conditions on Your Farm

The figures represent percentages of ammonia, available phosphoric acid and potash, in the order given:

For sandy and loamy soils, and all worn soils, especially where the manure is short—

2-10-6 or **2-10-4** or **2-12-2**

For use on clay loams or other soils which contain plenty of potash—

2-12-0

For use where the soil has plenty of available ammonia; where plenty of manure is used; where legumes are plowed under:—

0-10-8 or **0-12-4** — **0-12-2** or **0-16-0**

Our Automatic Formula Finder will help you select the right fertilizer to use on your other crops. Be sure to send for one—no charge or obligation.

We can help you solve this problem of profitable corn growing. Send for our booklet, "More Plantfood for More Corn". Also ask for our Automatic Formula Finder. It will help you select the kind of fertilizer needed for all your other crops. Both are free.

SOIL IMPROVEMENT COMMITTEE

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1031 Stock Exchange Building

A Solution of the Humus Problem

M. P. RASMUSSEN

Because manure is a bulky product, and because there is never enough of it to go around, most farmers have a practice of spreading the manure as far as it will go on the fields that are nearest the barn and leaving the more distant ones in grass just as long as the barest sort of crop grows on them. When the grass gets pretty thin they are plowed up, a cultivated or grain crop grown, and seeded down to grass as soon as possible. All the while the humus of the soil is being depleted. A constantly diminishing crop is grown, no manure is applied, and finally a mere excuse for a sod—a thin, shallow-rooted affair—is the only organic matter turned under. The inevitable results of such a practice are seen in the numerous "worn-out" hills and outlying fields in every section of the country. The term "worn out" is a misnomer; "starved out" is the proper term to use.

But what can be done? It doesn't pay to haul manure up steep hills or out to the distant fields even if we have enough of it—which we haven't. When we know that it costs 60 cents to haul a load of manure to a field a half mile away, we don't wax enthusiastic over such a practice. It may even cost more to haul manure there than the manure is worth. We know that those fields are poor and getting poorer, but we are frankly at a loss to know how to improve them under the existing circumstances. And yet some measures must be taken to restore the fertility of those fields. It is folly, if not financial suicide, to use high-priced labor on run-down land. And yet the solution of the problem is not difficult We all know that the root system of a crop increases in proportion to the growth of the top; big crops mean big roots. And of course a large crop leaves a large residue of roots and stubble. Plowing down heavy sods and dense masses of roots and stubble is the first step in the maintenance of humus.

But how are we to get heavy sod when our supply of farm manure is inadequate? The answer is: "Top-dress the hay land with commercial fertilizer.' Fertilizer applied to grass increases not only the growth of that part of the crop cut for hay, but also the roots and sod, which, when plowed down, add to the producing power of the soil.

Our own common sense demonstrates the truth of this proposition. All of us who ever actually farmed land will remember that when we turned under a good, thick, springy sod—whether of clover or timothy—the land worked up a whole lot easier the following spring than where a thin sod had been plowed down. Yes, and even more important than this, such a sod holds water, so that if we work the cultivator often enough the crops grown on the soil never suffer from drought.

Up at the Cornell Agricultural Experiment Station some timothy and clover sod was fertilized and an equal area not fertilized. The amount of organic matter in the roots and stubble of both fertilized and unfertilized sods was then measured. The technical terms in which these measurements were made may not mean much to us, but the fact that there was a heavy increase in organic matter after the fertilized crop does mean a lot. Reducing the results to practical terms we find that the extra organic matter grown with the aid of fertilizer on timothy and clover sod was equal to that in an application of 13,200 pounds of manure. This gives us some practical idea of the tremendous importance of this means of keeping up the producing power of the soil. And the Cornell Agricultural Experiment Station is not the only one which has worked on this problem. Down in West Virginia the subject has been given a thoroughgoing test. At the end of fifteen years, during which neither barn nor green manures were plowed down, they found that the extra organic matter on fertilized land was greater than that on unfertilized land by an amount equal to that in 28 tons of manure.

How was it done? It was really very simple. The crops on the fertilized land were always large—75 bushels of corn, 3½ tons of hay, 32 bushels of rye, 28 bushels of wheat per acre—and there was the heavy stubble and roots which contained the organic supply of the soil.

But, of course, we are not interested in increasing the supply of humus alone. We are after results—tangible results which express themselves in dollars and cents. Does this method pay? Here's what they tell us from Cornell: "The increase in yield of hay was in every case worth more than the cost of the fertilizers applied. This experiment indicates that it is a good practice to apply commercial fertilizers to grass land and save the manure for other crops." And the corn following the fertilized hay went 24 bushels more to the acre than on the unfertilized land. Figure 24 bushels extra per acre, at $1.50 per bushel, and satisfy yourself whether it pays or not.

Maryland.

The constitution of the United States requires that a census of the United States be taken every ten years. It is by this means that the apportionment of members of the house of representatives is made as to states.

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The production of almost three million bushels with a value of over four billion dollars gives the 1919 corn crop undisputed leadership. This great crop is not sufficient for the demands of a hungry world. The available acreage cannot be greatly increased.

The safest and most profitable means to increase this important crop lies in the intelligent use of commercial fertilizers. Our fertilizers will help you cut down your production cost per bushel by growing more bushels of corn per acre, and by reducing the cost per bushel you will increase your profit on every bushel raised.

The E. Frank Coe's Special Corn Fertilizers furnish plant food in the right forms for maximum crops.

"Corn, the Foundation of Profitable Farming" answers many troublesome questions. A copy of this book will be sent free if you will tell us how many acres of corn you intend to raise this season. Send for your copy today.

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The Clipper is the only mill that has the "Vertical Blast", which weighs every seed and kernel, separating the light, shrunken, immature seed from the plump, heavy mature seed, 86% of which will germinate under test. This point alone makes much of the difference between crop success and failure.

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We furnish an outfit of 12 screens for cleaning and grading all kinds of seed, seed grain, seed corn, clovers, alfalfa, millet, timothy, flax, peas, beans, cow peas, soy beans, etc. And, after the most careful study and tests in actual work, we guarantee this screen outfit to be the best that has ever been offered with any mill. There are screens for clover containing buckhorn or plantain, timothy seed containing pepper grass, for separating cockle from wheat and many other difficult separations.

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Made in Two Sizes: No. 1-B $35.00, No. 2-B $45.00 (Freight prepaid to any point east of the Mississippi River.)

In Successful Farming Three Factors are Prominent—the Soil, the Man and Good Seed

The Clipper Cleaner puts success within your reach by insuring the Good Seed

Write for Catalog and the address of the nearest jobber.

A. T. FERRELL & CO., SAGINAW, W. S., MICH.

GRASS SEEDS At Less Than ½ Price

of Clover SAVE money and buy Alsike Clover and Timothy mixed. We can save you one-half your grass seed bill by using this great grass combination. We have found this the greatest grass mixture we have ever sold, giving better satisfaction and we cannot recommend it too highly. Our customers who use it prefer same to pure Clover. Why not investigate this seed and be convinced of its merits? Our 116-page catalog contains full description and many letters from customers who recommend it in the highest terms. Have big stock Recleaned **Clover, Timothy, $5.40** per bushel; **Alsike and Timothy**, mixed, **$8.10** per bushel; **Alfalfa, Sweet Clover, Sudan Grass, Seed Corn, Oats, Spelts, Barley, Cane, Millet, Soy Beans, Rape, Vetch, Potatoes** and all Farm and Garden Seeds. Write now for **Free Samples** and big catalog. Prices low. We **guarantee** to save you money.

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5 GREAT NOVELTIES 20 cts. The glorious **Wallflower** recently introduced by us has succeeded everywhere and proved to be the most showy garden annual. Nothing can surpass the mass of bloom which it shows all Summer and Fall.

We now have three new colors—pink, yellow and scarlet, as well as crimson. All these colors mixed, 20 cts. per pkt.

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Attractive home furnishings—distinctive clothing, modern farm implements—everything you need for your home and farm.

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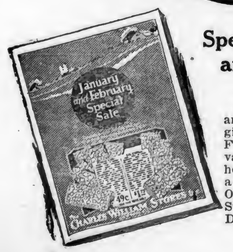

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CATALOG FREE

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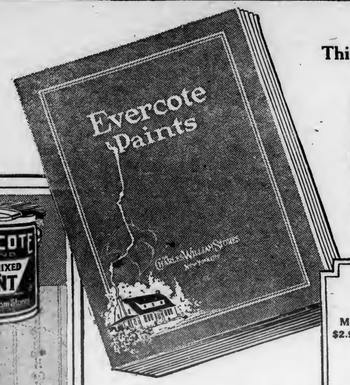

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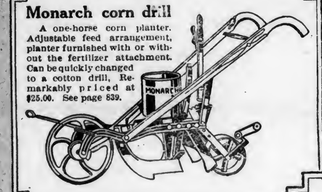

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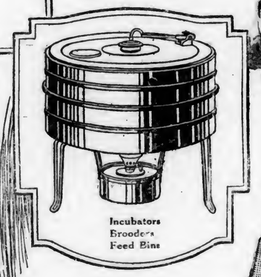

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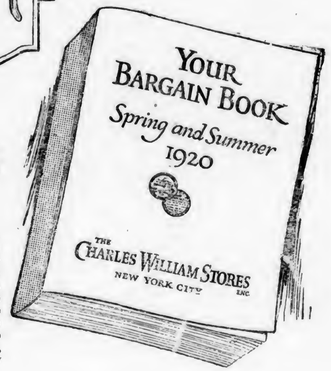

The CHARLES WILLIAM STORES INC.—*New York City*

MUTILATED PAGE

An English Poultryman Visits Us

F. V. L. TURNER

An English poultryman, visiting America for the first time, expressed unbounded amazement at poultry conditions in this country. This particular British subject was not of that kind that unhesitatingly condemns everything foreign to his own snug little isle, and proof is had in the order he placed for a mammoth incubator, to be immediately hurried across the pond, that he may yet this season bring forth a hatch beyond anything for size that has been ever done in his home country. Incidentally this Fritz-chaser saw enough of Americans in France to convince him that all of the great things were not in the British Museum and that Westminster Abbey is not in it with a few moderate-sized buildings located in New York, Chicago, Washington and Philadelphia.

Principal among the several things he found fault with was low hatchability of the average American egg. It appears that the foundation of successful rearing of flocks is high stamina and therefore high hatchability. In this country we seem to be content with 60 per cent. hatches; in England the average is 80 per cent. Figure this out. Twenty chicks more from a hundred eggs means an increase in flock size of 33 1-3 per cent. over American flocks. Eggs at 25 cents, for hatching, at 60 per cent. hatches, makes 60 chicks cost 41 cents each; 80 chicks at the same egg cost equals 31 cents each. In the case of 1,000,000 eggs hatched (as in the case of some of the large hatcheries) it means $10,000 in money expended by the hatchery, or a dead loss in money to that amount, plus labor, fuel, machinery and buildings. Our American hatcheries are 60 per cent. efficient, against 80 per cent. efficient in England. Of course, the big machine in England will cut down the percentage of efficiency, except where it is restricted in size to the point of hand turning and personal management, against machine management in this country. How far that percentage will go toward balancing cost of extra labor in securing increased efficiency remains to be proven out of actual operation.

In general the Briton leaves few loose ends; he is thorough to a degree unparalleled on this side. If his hen house makes moisture, he changes the shape of his house. Should a breeding bird, a chick, young, half grown or about maturity, be deficient in stamina, that bird goes into the burial lot or under a grape vine. The lame and halt, the weak and backward have no place on an English poultry plant. On the other hand, stamina is gained at the expense of size of egg; the American egg is always larger than the English. Stamina, though, gives greater production, and the Englishman is after the greater profit. Size is not penalized on the other side so much as it is here, where the commission salesman writes back to the farm: "You sent pullet eggs, and of course they sold low."

Above all other things the average Johnny Bull sets his house in order before he attempts to make it pleasant (profitable) to live in. One of the other prime considerations appealing forcefully to the English is the ability, proven, of both male and female breeders. Never does an Enlishman sell his best birds; these are retained to breed from to the last egg, and finally, when useless, they are killed.

For hatching purposes English breeders use the incubator extensively, but in small units, probably because the English are not so swift in taking to new things as are their American cousins, and therefore the mammoth has not arrived, except in isolated cases, in the old country. Sooner or later the two countries will get together on the question of poultry practices, certainly from the utility angle. Educational institutions in the British Isles are not far different from those here at home. Theory in a great measure occupies the place of practice, simply because the government there is as lax with its appropriations for cultural effort as in the United States. For this reason the Britisher is more thorough in his personal research work; the American depends on his neighbor, his farm paper, his daily and the desultory bulletin that comes from state or federal sources, usually from those willing enough but lacking facilities to even publish the results of honest effort.

It has been the pleasure of the writer to come in quite close contact with this foreigner. Aside from his pleasing personality, his ultra knowledge of selection and hatching and his minute handling of detail are super. To follow his reasonings and to see his accomplishments in selecting from American flocks are revelations. Trained, as the writer has been for twelve years, in detecting outward signs of prolificacy, it is more than satisfying to realize that material strides forward are yet in store for American breeders.

From this visitor it was learned that the methods followed in England vary so much from those employed here that there is much to be found fault with from a foreigner's viewpoint. Acreage is little known to the average inhabitant on the other side. Here almost boundless range is the rule.

One wide subject for discussion is the labor necessary to cover the comparatively vast stretches of roaming ground incident to American poultry plants. Large houses, large runs and acres of colony range are impossible in England, and therefore every poultry plat is of the highly intensive type, with labor reduced to a minimum.

A thoroughly just and warranted criticism concerns vitally flock averages in production of eggs. The average in America has been authoritatively placed at 60 eggs; the average in England is said to be over 100. It is also stated that the flock average on commercial plants is 160. Flock averages for American commercial plants are placed at 130. The difference between the two countries is an item of considerable food for thought.

Returning to the subject of breeding birds: English poultrymen insist that all breeding males shall be the sons of daughters fully qualified as layers that were healthy throughout their laying years (pullet, hen and breeder), and that this female's mother must have been the daughter of a heavy layer whose male parent was known as a producer of heavy layers.

This insistence has received the same thought in America that it has in England; it has been practiced more on the other side. For years the writer has spread it broadcast. Time and again it has been written into these columns. Two years ago a letter came to him thanking him for its repetition. The writer had secured males by selective breeding that begot his kind, or, rather, the kind of his mother, grandmother and great-grandmother. Our English friend finds a layer above the average; he finds a male from a mother laying above the average. The two, male and female, are mated singly; the best laying female (or more than one, if there are more) from this mating is in turn, after trap-nesting, mated to her father. Thus is begun a line that can be intermixed with a similar line and rapid increases made. Few Americans have the patience to await this culmination —much to their discredit. It is hoped more English breeders will visit us; the profit is greater to us.

A Score Card for Egg Production

A score card for judging poultry in utility classes by their external characteristics has at last been evolved. It is one of the results of a two weeks' conference held at the international egg-laying and breeding contest at Vineland, N. J., which was called together by Prof. H. R. Lewis, of the poultry department of the New Jersey State College and attended by leading poultrymen from Cornell, Connecticut, New Jersey and the Ontario Agricultural College at Guelph.

One thousand yearling hens with a complete year's laying record behind them were available for study the first week, and 2000 pullets, which constitute the entries for the second Vineland contest, just opening, were on hand during the second week.

From studies made of these birds and the subsequent discussions a preliminary score card was produced, which is designed especially to give the exhibitor, when picking his birds, an idea of what the judge is going to look for in the different sections of the bird and their comparative importance. The numerical values are so worked out that the perfect bird is recognized as 100 per cent., which is to be equivalent to 300 eggs. Thus every cut of 1 point is a cut of 3 eggs.

This is only the preliminary card, and is presented for the consideration of poultrymen only as a first step in standardizing utility judging. It is as follows:

SCORE CARD

	Perfection	Value Egg Production
Body Type (as seen in coop or on floor)	25	75
Head and Adjuncts..	15	45
Body Conformation (as determined by handling)	30	90
Handling Quality ..	10	30
Legs and Toes	5	15
Condition	15	45
Total Perfection Score	100	300

Winter Rations for Laying Hens

We have heard how three other state experiment stations feed for winter eggs, so it is time now we learn what they do in Pennsylvania. The proper ration has a good deal to do with this, say the poultry experts at the Pennsylvania State College, who recommend a grain mixture of two parts cracked corn, two parts wheat and one part oats. This should be fed morning and night, the amount given at night being about twice that allowed in the morning, so the hens will go to roost with full crops. A mash, preferably fed in dry hoppers to reduce labor and allow the hens to get all they want, should also be supplied. This may be composed of two parts cornmeal and one part each of wheat middlings, wheat bran and beef scrap. Hoppers may be left open all day with Leghorns and other lightweight breeds, or with pullets of the heavier breeds, but for mature hens of the heavier breeds the hopper should be open only during the afternoon, or the hens will get too fat.

It is important to supplement the grain feed with some form of succulence, taking care not to feed too much.

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Maple Sugar Making on the Farm

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1286, MARCH 1.—The spring farm sales are now in season. To what extent have you found it profitable to attend them? Is it customary in your locality for the seller to provide a free dinner? If not, tell us something about these sales which is typical of your vicinity.

TOPIC NO. 1287, MARCH 15.—Have you found it pays to have a side line specialty, such as water cress, cottage cheese, eggs for hatching, or any of a hundred others? Just what is yours, how do you handle it, and what are the returns, both in pleasure and profit?

J. U., Lafargeville, N. Y.—The first step is not the tapping of the trees. Before the time for this comes there are several things to be done. You must have some wood. Of course, if you use a modern evaporator you will not do just as we do who rely on the kettle and pan. A certain amount of wood can be picked up in the sugar bush in the spring, but it will not be enough, and the best way is to get some good wood cut and under cover some time before it is wanted.

Then, you must have a place to boil sap. A large kettle may be used, but a pan of galvanized iron is much better. This should be some six inches deep, two feet wide or more, and six feet long. It should be set on a wall of stone, brick or concrete. This should be about two feet high, and should be under the sides and one end; the other end is left open for firing, but may have a sheet iron door. There must be a chimney or smokepipe at the closed end. There should be a roof over the pan, and it is well to have a good building, say 8 by 16 feet, with a gable roof, and run the pan lengthwise in one corner. You will want a large tank holding some twelve or fifteen barrels for storing sap. I have usually been able to rent one of my hardware man.

To tap the trees, use a bit suited to the kinds of spouts you use; a half inch or seven-sixteenths may be all right. Find a smooth place, preferably on the south side of the tree, but if a tree has been tapped several times, get away from the old places; at least do not tap above or below them.

I have always wanted covers for the buckets, as they would save some sap being spoiled by rain and also save work of emptying rain water out after showers.

The boiling is a simple matter of firing and adding fresh sap until the batch is ready to finish, and then one must not have much fire, and should have some reserve sap on hand to put in if the fire gets too hot for the amount in the pan.

A. B., West Valley, N. Y.—The first step towards making maple sugar is, when the first warm thaw comes in March, to take your axe and tapping bit and start for the woods. With your axe hew off a small place in the bark; then use your bit, and bore 1½ inches. A tapping bit is a little less than one-half inch. Then the spouts, with hooks on them, are inserted, and buckets hung. In a good run they will need to be gathered every day into a galvanized draw tub and drawn, and this tub emptied into a large store tub at the boiling place. Most sugar makers have a wide-runner, flat-bottomed sled to draw their sap. The sap is then boiled down with evaporator or stone arch and pans until it is the right thickness, and then taken off and taken to the house to finish cooking down into sugar.

Syrup and sugar thermometers make it easier for one not used to the work. A good, convenient sugar house is very essential, and evaporators implify the work, but as nice sugar as I saw last year was boiled in a stone arch right outdoors.

One man that I knew put his syrup up cold for market. He cooked it to the right test, then drew it off in a tin can with a faucet two or three inches from the bottom so that the sediment if any, was below the faucet, and, when cold, filled into his cans for market, and it was splendid. One important point is to have plenty of fuel on hand, but as wood gets scarcer and labor higher, many buy soft coal for fuel.

Mrs. E. K., Wellsboro, Pa.—Having about 200 young sugar maple trees on our farm, we started tapping a few of the largest ones for syrup for home use, but finding the work interesting and not too strenuous for women who like outdoor exercise, and the scarcity and high prices of sugar combined, induced us to keep up the good work, and we now tap every tree we consider old enough—about 180 in all.

The sap season being from the last week in February through March, we try to have everything ready by that time—plenty of loose wood, old posts, etc., hauled and cut during the winter when the men are not so busy at other work, and sap pails and spouts brought down from the attic. Not having enough metal spouts, we made wooden ones from elder sticks. In tapping the trees, we use a ⅜-inch bit, and make the hole about an inch deep into the wood. Weather with alternate freezes and thaws gives the best flow.

We boil the sap in a galvanized pan measuring 3 feet by 6 feet, set over a substantial arch of firebrick not quite the width of the pan. As bits of bark and other waste in the sap cause it to sour, and snow and rain get into the pails, we had as many circular pieces of tin made as we have pails, a little larger than the tops, and fasten them with wire. We also had a shed of old lumber built over the arch. As the sap boils, the impurities are skimmed off as they reach the top, and when the boiling sap reaches a weight of 11 pounds to the gallon it is ready to be put in cans as syrup. "Sugaring off" means the condition of the boiling syrup when ready to be cooled for sugar, which is told by testing it out in snow or cold water; a waxy stage is right.

Average trees yield 10 to 12 gallons of sap a year, containing 4 to 6 per cent. of sugar, although some sap is much sweeter. After the trees begin to bud, the syrup has a disagreeable flavor, which disappears, however, when used in baking; but we stop gathering it then, as we feel the trees at this time should not be robbed of it.

A. J. L., Albion, W. Va.—I have not made maple sugar for a number of years, but in my boyhood days cane sugar and syrup were as now very costly and hard to get. We used maple sugar largely as a substitute for commercial sugar.

The trees were tapped in latter part of winter, usually in February, by boring a 1 or 1¼-inch auger hole, slanting downward two or three inches, in the body of the tree; then a ¾-inch auger hole was bored slanting upward to connect with the larger hole, and a wooden spout made of an elder stick, hollowed out, about a foot long, driven in the smaller hole, to run the sap into a vessel. Metal tubes are now manufactured and on the market for this purpose.

We collected the sap in buckets and barrels, and boiled it down in iron kettles; but evaporating pans are now used, and are much better. When the sap got boiled down pretty near to syrup, the white of an egg was dropped in to clean the syrup, and when it came to a boil it was strained, and the syrup boiled slowly until it got thick enough that it would make hard sugar when cold. Some persons used just a little soda instead of white of an egg for clearing the syrup. Greased cups or bowls were used to put the sugar in to allow it to get cold and hard. If syrup was to be made, the boiling down was stopped when the desired thickness was reached, and the syrup put into vessels to cool.

W. A. G., Vincennes, Ind.—It is a sorrowful fact that the American people have been very wasteful of the many splendid resources found ready for development and use. It is so true regarding the wholesale destruction of innumerable extensive growths of the maple or sugar trees. Sugar orchards all over the country are scarce to what they once were.

There is no sweet placed upon our tables superior to maple syrup, but it is scarce now and hardly procurable at any price. Now that sugar and the commercial syrups are very high in price, everyone possessing a grove of sugar trees—many or few—should make at least enough of syrup for family use.

We aim to tap the trees in this the southwest section of the state about the middle of February. The 12-quart galvanized pails are employed, and the metal spouts. Large trees are tapped in two places. Two spouts are used for each pail used to catch the sap.

The sap is hauled in as often as the pails fill. It is reduced to syrup in large cast kettles often, but we find a great saving of fuel and a brighter and better flavored syrup is made with the modern evaporators.

The way we handle the sap now, no clarifying or straining is needed after the evaporator is started to boiling. Clean filtered sap runs in at one end, and the finished syrup is drawn off at the other. We place it in 1-gallon tin pails for future use, and it keeps as fine as can be desired for any length of time.

Co-operating with the plan of restoring the devastated woodlands of France and Belgium, forestry officials at the Ohio Experiment Station are supervising the gathering of hundreds of pounds of acorns which will be shipped over the sea and planted in forestry nurseries. Black oak and white oak are most desired for the planting of new woodlands, and in order to secure the most viable acorns the forestry officials are going into the virgin forest lands where sylvan conditions have not been marred by man.

If it were not for the men at the state colleges and the experiment stations who study out what makes things grow and how to kill bugs and fight plant diseases, farming would be back where it was a hundred years ago.

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Do Away With BARRENNESS

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

MARCH 1.—What has been your experience raising guineas for market? Tell us not only how you care for them, but how you kill, dress and sell them. Is it a profitable branch of poultry keeping?

MARCH 15.—What vegetable in your garden, aside from potatoes or tomatoes, do you find gives you the largest amount of food for your home table? Tell us the essential facts about growing it, and at least one of the out-of-the-ordinary ways you prepare it.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Roses in the Home Flower Garden

E. M. T. B., Willet, N. Y.—There are no flowering vines that can compare with the following roses that I have tested and found desirable above all others. The climbing American Beauty is no ordinary climbing rose, but is a vigorous, rampant climber of the real American Beauty. It has gorgeous flowers, surpassing all others in fragrance. The color is a deep, glowing crimson red. Foliage is nearly disease-proof, a beautiful glossy green. The climbing Gruss an Teplitz is another matchless rose, producing a mass of bloom in June, and flowers occasionally all the rest of the season. Prairie Queen and Dorothy Perkins are splendid climbers of well-known merits. The above-named roses are hardy in all localities, and have withstood a rigid winter of a temperature 10 to 25 degrees below zero without protection.

An unsightly building is beautiful when almost covered by one of these roses. They thrive the best when planted against walls, fences or where they can spread over verandas, outbuildings or over arched trellises.

The character of foliage and hardiness of these roses were important considerations when I chose the above-named types. If one prefers the bush type to the climbing sorts, General Jacqueminot, Vicks' Caprice, the Cochets and Souperts are among the best.

A clayey loam is the best soil for roses. It must be well pulverized before planting, and necessary drainage provided by placing broken crockery or soft coal cinders beneath the soil. Horse or cow manure that is one or two years old is the best fertilizer that can be obtained. Never allow the roots to become dry. Soak them in luke warm water an hour or two before planting. Set them deeper than they were growing before shipping. Shade them for a few days, and water often enough to keep them moist but not wet.

Mrs. S. R. B., Stockton, N. J.—No one variety of plant is so satisfactory for the beautifying of the home grounds as the rose. In my garden I have at least 200 rose bushes. I prefer the monthly bloomers to the annuals, as they give so much more pleasure. I can recommend the Pink Hermosa, Virginia Cox (red), Paul Neyron (pink), La France (pink), the Bridesmaid (white), Perfection des Blanches (white), Pink Killarney, Madame Herriott (saffron), Ophelia (flesh), Duchess of Albany (pink), Champion of the World (pink), Alfred Carrier (cream), Frau Karl Druschki (white) and the entire list of Souperts and Cochets.

My annuals are Victor Verdier (pink), Magna Charta (pink) and Gen. Jacqueminet (pink). The Glory of Mosses (pink) is very satisfactory.

Of the climbers my favorite is Dorothy Perkins (pink), while the Empress of China (pink) is a free bloomer.

Could I have but one rose bush, that would be the Pink Hermosa. Another member of the family prefers Clothilde Soupert. Still another prefers Virginia Cox. Mr. B. is loud in praise of the York and Lancaster rose (pink and white variegated); this is possibly the oldest rose known. My Pink Hermosa has been in the garden for four generations, and is still vigorous and free blooming.

For soil I prefer one-third sand, one-third leaf mold, one-third dry and pulverized cow manure.

I am more successful with my own cuttings than with hothouse plants. In September I place cuttings in soil, inverting a glass fruit jar over them. Under no circumstances may this be removed until May. If season is dry, water frequently.

Mrs. W. J. L., Canastota, N. Y.—To have many blossoms on your roses, plant them in the spring. Select an open, sunny locality where they will get the morning sun, which will not burn and dry them as the afternoon sun does. Never water them after 9 A. M. or before 4 P. M., as the sun, shining through the drops of water, will blister or burn them, which kills the new shoots and blossoms.

In the fall prune out all the oldest, blackest branches. When cold weather approaches, heap the soil high up around the base of the plants. Then cover branches (bent to the ground) with straw, leaves, etc. Do not uncover in spring until frost is out of ground, when the plants should be pruned again, cutting out entirely all weak, thin growth and cutting the stronger shoots back to within ten or twelve inches of roots. Do not cut back until buds have sprouted; then you can tell the dead stalks from those still running with sap and will provide new shoots. Cultivate around roots every two or three days until in blossom.

All this may sound like a lot of work, but it requires a very little time. Some of the most attractive hardy ever-blooming hybrid tea roses are: Killarney, probably the best known of this class, a rich Imperial pink color; Laurent Carle, large, brilliant carmine, very sweet; Madame Ravary, a rich, deep yellow, elegant form, very double and sweet scented; Frau Karl Druschki, the finest white rose in cultivation and my favorite.

Climbing roses need neat trellises, and should have the dead wood cut out, shortening the canes to the space to be covered. Three of the best are: Excelsa, improved crimson Rambler, rich in color and healthy grower; Dorothy Perkins, double, soft shell pink, free bloomer, lasts in good condition for a long time; Gardenia, buds a bright yellow, expanding into cream-colored double flowers.

Miss A. T., Ashland, Va.—A flower garden is not complete without roses. Last summer I put hydrated lime on my garden. I put it on the ground between the plants, and used a rake to mix the earth and lime thoroughly. This sweetened the soil and seemed to get rid of root lice, cutworms, ants and other insects. Black Leaf 40 kills plant lice on roses and vegetables. Hard work and good care will make the most blooms. I prefer the monthly blooming roses. I have the red, pink, white and yellow ones. I like the Dorothy Perkins, the Philadelphia Rambler and Crimson Rambler. Glory of Polyanthas or Baby Rambler will bloom constantly all summer. I raise zinnias (or youth and old age). I think they are just beautiful, and they continue blooming four months, from June until killed by frost in October, and they are so many pretty different colors and are double. They look almost like the dahlias that I raise. My mother planted a crepe myrtle bush twenty-two years ago here, and it blooms every August and keeps blooming three or four weeks. It is a pink one, and very pretty. I like them because you don't have to plant them but once. I certainly do love flowers.

Mrs. D. L. T., Fine Creek Mills, Va.—My garden has a clay soil, which seems to be the kind in which roses grow to perfection. There is seldom a day from May until November that I cannot cut roses from my bushes. Every fall after the blooming season is over I have my roses well worked, and cut out any unsightly or dead branches. The tea roses do best when cut down to within three inches of the ground. The blossoms come on the new wood, and when cut down in the fall, this new growth starts early in the spring, and the roses are larger and have longer stems than when grown on the old wood. In November I have them mulched with fine stable manure, which protects them all winter and, if not too thick around them, may be left all summer to conserve the moisture, and worked into the soil in the fall to provide humus. I also prune my climbing roses in the fall, as this is more easily done when the leaves are off. I cut out the old wood, leaving the young growth to bloom in the spring. All of my roses are dear to me, for I've rooted many of them from cuttings, and watched them as they grew to maturity. I have the American Beauty, Safrano, Paul Neyron, Clothilde Soupert, Duchess de Brabant, Etoile de Lyon, Bridesmaid, Queen Oga, and, besides these, some of the old-time roses, among them the Damask. My climbing roses are the Crimson and Yellow Ramblers and the Blue rose, which is not beautiful at short range, when each rose is considered separately, but at a short distance its appearance is gorgeous. It does not mildew, grows luxuriantly, and makes a fine screen for a porch or lattice.

Hot Lunches for Schools

In cold weather hot lunches for school children, or one hot dish to supplement the lunch brought from home, are recommended by the home economics extension service of the Pennsylvania State College. One hot dish can be served at noon with little trouble and expense, and will go a long way toward keeping the children fit and saving doctor bills. Full instructions and recipes for supplying a school with something hot every day are given in a bulletin by Miss Pearl MacDonald. It contains a menu which provides a different dish for each school day in the month, and it tells how to prepare, in the school, scalloped dishes, creamed dishes, soups, chowders, sauces, vegetables, desserts and beverages in an almost unlimited number of ways. This not only provides better food for the children, but is an aid in developing the social side of school life. It helps train both boys and girls in meeting and solving home problems. The children are also inclined to take plenty of time for their meals—a habit which leads to better health. The bulletin may be had by writing to the School of Agriculture, State College, Pa.

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CHAPTER VII

THE FIRST STEP

It was Sunday night in midwinter. After church David remained for a trustees' meeting, and Carol walked home with some of the younger ones of the congregation. When they asked if she wished them to wait with her for David she shook her head, smiling gratefully but with weariness.

"No, thank you. I am going right straight to bed. I am tired."

Into the little manse she crept, sinking into the first easy chair that presented itself. With slow, listless fingers she removed her wraps, dropping them on the floor beside her, laboriously unbuttoned and removed her shoes, and, in the same lifeless manner, loosened her dress and took the pins from her hair. Then, holding her garments about her, she went in search of night dress, slippers and negligee. A few seconds later she returned and curled herself up with some cushions on the floor before the fireplace.

"Ought to make some coffee—David's so hungry after church—too—dead—tired—ummmmm." Her voice trailed off into a murmur, and she closed her eyes.

David found her so, soundly sleeping, her hair curling about her face. He knelt down and kissed her. She opened one eye.

"Coffee?" she queried automatically.

"I should say not. Go to bed." He sprawled full length on the floor, his head against her arm.

"Worn out, aren't you, David?"

"Well, I'm ready for bed. Such a day! Did you have time for Mrs. Garder before Endeavor?"

"Yes; she knew me, too. I am glad I went. She had been waiting for me. They say it is only a few days now. The way of a minister's wife is hard sometimes. She wanted me to sing "Lead Kindly Light," and was so puzzled and confused when I insisted I couldn't sing. She thought ministers' wives always sang. I know she is disappointed in me now. If the Lord foreknew that I was going to marry a minister, why didn't He foreordain that I should sing?"

David laughed, but attempted no explanation.

"Did you get along all right at the Old Ladies' Home?"

"Oh, fine. The girls sang beautifully, and I read the Bible lesson without mispronouncing a single word. Did the boys miss me at the Hollow?"

"Yes; they said they needed you worse than the old ladies. Maybe they are right. We must save your Sunday afternoons for them after this. They do need you."

"Did you have supper with the Baldwins?"

"Yes. You stayed with Mrs. Norris, didn't you?"

"Yes. Um, I am sleepy."

David coughed slightly.

"Get up off this floor, David Duke," scolded Carol. "Don't you know that floors are always drafty? I am surprised at you. I wish Prudence was here to make you soak your feet in hot water and drink peppermint tea."

"You work too hard, Carol. You are busy every minute."

"Yes. I have to be to keep in hailing distance of you. You usually do about three things at once."

"It's been a good year, Carol. You've enjoyed it, spite of everything, haven't you?"

"It's been the most wonderful year one could dream of. Even Connie's literary imagination could not conjure up a sweeter one."

"Always something to do, something to think of, someone to see—always on the alert, today crowded full, tomorrow to look forward to."

"And, best of all, David, always with you, working with you, taking care of you—always. Oh, I am tired, but it is not so bad being tired out when you've done your level best."

"Carol, it is fine, labor is, it is life. I can't imagine an existence without it. Going to bed, worn out with the day, rising in the morning ready to plunge in over one's ears—it is the only real life there is. How do people endure a drifting through the days, with never anything to do and never worn enough to sleep?"

"I don't know," said Carol promptly. "They aren't alive, that's sure. But let's go to bed. David, please get off that floor, and stop coughing."

David obediently got up, lightly dusting his trousers as he did so. Then he lifted his arms high and breathed deeply. "Anyhow, it is better to be tired than lazy, isn't it?"

CHAPTER VIII

REACTION

"Will you have this woman?"

David's clear, low voice sounded over the little church, and the bride lifted confident, trusting eyes to his face. The people in the pews leaned forward. They had glanced approvingly at the slender, dark-eyed girl in her bridal white, but now every eye was centered on the minister. The hand in which he held the Book was white, blue veined, the fingers long and thin. His eyes were nervously bright, with faint circles beneath them.

David looked sick.

So the glowing, sweet-faced bride was neglected, and the groom received scant attention. The minister cleared his throat slightly, and the service went smoothly on to the end.

But the sigh of relief that went up at its conclusion betokened not so much satisfaction that another young couple were setting forth on the troubled, tempting waters of matrimony, as that David had finished another service and all might yet be well.

Carol, half way back in the church, had heard not one word of the service.

"David is an angel, but I do wish he were a little less heavenly," she thought passionately. "He—makes me nervous."

The carriage was at the door to take the minister and his wife to the Daniels home for the bridal reception, but David said: "Tell him to take us to the manse first, Carol. I've got to rest a minute. I'm tired tonight."

In the living-room of the manse he carefully removed the handsome black coat in which he had been graduated from the seminary in Chicago, and in which a little later he had been ordained for the ministry and installed in his church in the Heights. Still later he had worn it at his marriage. David hung it over the back of a chair, saying as he did so:

"Wearing pretty well, isn't it? It may be called upon to officiate in other crises for me, so it behooves me to husband it well."

Then he dropped heavily on the davenport before the fireplace, with Carol crouching on a cushion beside him, stroking his hand.

"Let's not go to the reception," she said. "We've congratulated them a dozen times already."

"Oh, we've got to go," he answered. "They would be disappointed. We'll only stay a few minutes. Just as soon as I rest—I am played out tonight—it is only a step."

They slipped among the guests at the reception quietly and unobtrusively, but were instantly surrounded.

"A good service, David," said Mr. Daniels, eyeing him keenly. "You make such a pretty job of it I'd like to try it over myself."

"Now, Dan," expostulated his anxious little wife. "Don't you pay any attention to him, Mrs. Duke; he's always talking."

"I know it," said Carol appreciatively. "I never pay attention."

"You need a vacation, Mr. Duke," broke in a voice impulsively.

"I know it," assented David. "We'll take one in the spring—and you can help pay the expenses."

"You'd better take it now," suggested Mrs. Baldwin. "The church can get along without you, you know."

But the laugh that went up was not genuine. Many of them, in their devotion to David, wondered if the church really could get along without him.

David gaily waved aside the enormous plate of refreshments that was passed to him. I had my dinner, you know," he explained. "Carol isn't neglecting me."

"He had it, but he didn't eat it—and it was fried chicken," said Carol sadly.

A few minutes later they were at home again, and before Carol had finished the solemn task of rubbing cold cream into her pretty skin, David was sleeping heavily, his face flushed, his hands twitching nervously at times.

Carol stood above him, gazing adoringly down upon him for a while. Then, shutting her eyes, she said fervently:

"Oh, God, do make David less like an angel and more like other men."

Early the next morning she was up and had steaming hot coffee ready for David almost before his eyes were open.

"To crowd out that mean little cough that spoils your breakfast," she said. "I shall keep you in bed today."

All morning David lounged around the house, hugging the fireplace, and complained of feeling cold, though it was a warm, bright day late in April and although the fire was blazing. In

the afternoon he took off his jacket and loosened his collar.

"It certainly is hot enough now," he declared. "Open the windows, Carol—I am roasting."

"That is fever," she announced ominously. "Do you feel very badly?"

"Well, nothing extra," he assented grudgingly.

"David, if you love me, let's call a doctor. You are going to have the grip, or pneumonia, or something awful, and—if you love me, David."

The pleading voice arrested his refusal, and he gave the desired consent, still laughing at the silly notion.

So Carol sped next door to the home of Mr. Daniels, the fatherly elder.

"Mr. Daniels," she cried, brightly happy because David had consented to a doctor, and a doctor meant health and strength and the end of that hateful little cough, "we are going to have a doctor see David. What is the name of that man down town—the one you think is so wonderful?"

Mr. Daniels gladly gave her the name, warmly approving the move, but he shook his head a little over David. "I am no pessimist," he said, "but David is not just exactly right."

"The doctor will fix him up," cried Carol joyously. "I am so relieved and comfortable now. Don't try to worry me."

David looked nervous when Carol gave him the name of the physician she had called.

"He is a Catholic—and some of the members think——"

"Of course they do, but I am the head of this house," declared Carol, standing on tiptoe and assuming her most lordly air. "And Doctor O'Hara is the best in town, and he is coming."

"Oh, all right, if you feel like that about it. I don't suppose he would give me strychnine just because I am a Presbyterian minister."

"Oh, mercy!" ejaculated Carol. "I never thought of that. Do you suppose he would?"

But David only laughed at her, as he so often did.

When Carol met the doctor at the door she found instant reassurance in the strong, kind, clever face.

"It's a cold," she explained, "but it hangs on too long, and he keeps running down hill."

The doctor looked very searchingly into David's pale, bright face. And Carol and David did not know that the extra joke and the extravagant cheeriness of his voice indicated that things looked badly. They took great satisfaction in his easy manner, and then, after a brief examination, he said:

"Now, into bed you go, Mr. Duke, and there you stay a while. Get a substitute for Sunday. You've got to make a baby of a bad cold and pet it a little."

David and Carol laughed, and when the doctor went away, and David was safely in bed, Carol perched up beside him and they had a stirring game of parcheesi. But David soon tired, and lay very quietly all evening, eating no dinner and talking very little. Telephone messages from "the members" came thick and fast, with offers of all kinds of tempting viands, and callers came streaming to the door. But Father Daniels, next door, turned them every one away.

"He can't talk any more," he said in his abrupt yet kindly way. "He's just worn out talking to this bunch—that's all that ails him."

Next day the doctor came again, gave another examination, and said there was some little congestion in the lungs.

"Just do as I have told you—keep the windows up, drink a lot of fresh milk, and eat all the raw eggs you can choke down."

"He won't eat anything," said Carol.

"Let him fast, then, and he'll soon be begging for raw eggs. I'll see you again tomorrow."

When he returned next day there was a little shadow in the kind eyes. David lay on the cot, smiling, and Carol stood beside him.

"How do you feel today?"

"Oh, just fine," came the ready answer.

But the shadow in the doctor's eyes deepened.

"The meanest part of a doctor's work is handing out death blows to hope," he said, "but you two are big enough to take a hard knock without flinching, and I won't need to beat around the bush. Mr. Duke, you have tuberculosis."

David winced a little, and Carol clutched his hand spasmodically, yet they smiled quickly, comfortingly into each other's eyes.

"That does not mean that your life is fanning out, by any means," continued the doctor in his easy voice. "We've got a grip on the disease now. You are getting it right at the start, and you stand a splendid chance. Your clean life will help. Your laughing wife will help. Your confidence in a Divine Doctor will help. Everything is on your side. If you can, I think I should go out West somewhere—to New Mexico or Arizona. It is low here, and damp. Lots of people chase the cure here, and find it, but it is easier out there where the air is light and fine and the temperature is even and where doctors specialize on lungs."

"Yes, yes, indeed; we shall go right away," declared Carol feverishly. "Yes, indeed."

"Keep on with my treatment while you are here. And get out as soon as you can. Stay in bed all the time, and don't bother with many visitors. I don't need to tell you the minor precautions. You both have brains. Be sure and use them. Now, don't get blue. You've still got plenty to laugh at, Mrs. Duke. And I give you fair warning, when you quit laughing there's the end of the fight. You haven't any other weapon strong enough to beat the germs."

It was hard indeed for Carol to see anything to laugh at just that moment, but she smiled, rather wanly, at the doctor when he went away.

There was silence between them for a moment.

At last she leaned over him and whispered breathlessly: "Maybe it is really a good thing, David. You did need a vacation, and now you are bound to get it."

David smiled at her persistent philosophy of optimism.

Again there was silence. Finally, with an effort, he spoke: "Carol, I—I could have thanked God for letting us know this two years ago. Then you would have escaped."

"David, don't say that. Just this minute I was thanking Him in my heart because we didn't know until we belonged to each other."

She lifted her lips to him, as she always did when deeply moved, and instinctively he lowered his to meet them. But before he touched her he stopped, stricken by a bitter thought, and pushed her face away almost roughly.

"Oh, Carol," he cried, "I can't. I can never kiss you again. I have loved to touch you, always. I have loved your cool, sweet, powdery skin, and your lips—I have always thought of your lips as a crimson bow in a pale pink cloud—I—I have loved to touch you. I have always adored your face, the look of it as well as the feel of it. I have *loved* to kiss you."

Carol slipped an arm beneath his head, and strove to pull his hand away from his face.

"Go on and do it," she whispered passionately. "I am not afraid. You kissed me yesterday, and it didn't hurt me. Kiss me, David—I don't care if I do get it."

He laughed at her then, uncertainly, brokenly, but he laughed. "Oh, no you don't, my lady," he said. "You've got to keep strong and well to take care of me. You want to get sick so you'll get half the petting."

Like a flash came the revelation of what her future was to be. "Oh, of course," she said, in a changed voice. "Of course, we must be careful—I forgot. I'll have to keep very strong and rugged, won't I? Indeed, I will be careful."

Then they sat silent again.

"Out West," he said at last, dreamily. "Out West. I've always wanted to go West. Not just this way, but—maybe it is our chance, Carol."

"Of course it is. We'll just rest and play a couple of months, and then come back better than ever. No, let's get a church out there, and stay forever. That will be safety first. Isn't it grand we have that money in the bank, David? Think how solemn it would be now if we were clear broke, as we were before we decided to economize and start a bank account."

David nodded, smiling, but the smile was grave. The little bank account was very fine, but to David, lying there with the wreck of his life about him, the outlook was solemn in spite of it.

(To be continued)

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A Highly Successful Dairy Farm

JOHN DAY

Last year John Grove, of Frederick county, Maryland—whom the writer considers one of the best farmers and dairymen of his state—marketed, in round numbers, $6500 worth of market milk, $1000 worth of hay, $720 worth of wheat and $150 of sugar corn, a total of $8370 of farm produce cash-cropped from the 55-acre farm which he owns. In this connection it is worthy of mention that Mr. Grove also has to rent twenty acres of good farming land, as he usually devotes such an area to permanent pasturage to furnish an abundance of succulent and nutritious grazing for the milk-makers during the grass season.

For over a score of years Mr. Grove was a school teacher, during which period he accumulated the wherewithal to begin dairy farming on a limited scale. During his years of training the Johnny Smiths and Mary Browns of his locality he learned to appreciate the value of the three I's—industry, intensivity and imitation—as fundamentals of success, and when he essayed farming he practiced these principles and also applied the doctrines of systematic business management to his agricultural operations. Mr. Grove is industrious; he farms intensively, and he patterns his work after that of his associates who are doing better than he is. He possesses the ability to capitalize potential possibilities and to measure this year's results in the terms of conditions which will obtain three or four years hence. But enough about the man; let me briefly tell you how he turns the trick, and allow you personally to figure at your leisure whether or not he is realizing apple-pie results.

Briefly, the Grove farm, consisting of 55 owned and 20 rented acres, is cropped in this wise: 18 acres of corn, of which 11 acres are field corn, which average around 70 bushels; 4 acres of silage corn, which nearly fills to capacity a 100-ton silo, and 3 acres of sugar corn, which makes between 2½ and 3 tons an acre of sweet corn, which is sold to the local canning factory; 6 acres of alfalfa, cut three times, and 9 acres of timothy and clover produced, in 1919, 60 tons of hay, enough to supply the home live stock and permit of selling $1000 worth of roughage on the side; 8 acres more of alfalfa also were seeded last fall. The corn stubble is commonly seeded to wheat, which generally produces in the neighborhood of 20 bushels to the acre, the grain being sold and the straw used as rough feed and bedding for the cows and horses. A small home orchard provides plenty of fruit for home use, and several years ago, when his peach trees were producing, this farmer sold from $100 to $150 worth of fruit a year from 65 trees.

The Grove farm is constantly growing richer and more productive as a result of the commendable system of rotation of corn, wheat and grass which is followed and because of the correct methods of tillage and the excellent plan of fertilization which are pursued. Each year approximately 200 two-horse loads of manure are hauled to the fields in the best of condition to furnish plenty of plant food for the crops. As a rule the manure is spread over the sod which is to be subsequently cropped to corn, although last fall Mr. Grove also top-dressed his alfalfa in order to carry it in good shape through the winter and allow it plenty of food. The turning under of the clover sods also adds markedly to the fertility on this remarkable little farm.

BREEDING AND FEEDING

The Grove grade and pure-bred Holsteins are practically all home raised, a fine registered bull being kept and the best heifers being saved as recruits for the milking herd. When the writer recently visited Mr. Grove the 26 cows in milk were producing 77 gallons daily, an average of about three gallons a cow. The herd averages very close to 7000 pounds of milk a cow, one year with another, and is representative of what can be accomplished with good "black-and-whites" where the animals are properly fed and handled. Clean, sanitary methods of producing and caring for the milk keep the bacterial content of this cash crop below 45,000 a cubic centimeter, while the fact that the dairy farm score of this place is around 85 points is an accurate reflection of the clean stable, steel stalls and stanchions, concrete mangers, milking machine, simple sterilizing outfit, milk cooler and accessory dairy equipment which are employed.

Mr. Grove reduces the use of valuable hay by utilizing corn silage and fodder as the chief filler feeds for his cows. He also uses some alfalfa and clover hay as change feeds to alternate with the other long feed. He believes that many dairymen are extravagant with costly hay, the use of which they could materially reduce by the more intelligent utilization of corn stover. Mr. Grove also suggests the inadvisability of pasturing frosted grass, as he says from personal experience that the cows gain little nutrition from grazing which has been damaged by Jack Frost, and that generally it is best to keep them off the grass fields when the cold weather arrives.

The Grove Holsteins have the run of a comfortable barn lot where they have access to straw and fodder during the days when the weather is clement, but during very rough weather the animals are maintained in their stalls, even being watered indoors. On the average, this dairyman, from his experience of thirteen years, finds that it usually pays to let the cows exercise a little every day when it is possible.

With veals bringing from 16 to 18 cents a pound, Mr. Grove has found it profitable to veal the calves which he does not want to raise. In this work he feeds whole milk for a short period, and as soon as possible accustoms the calves to commercial milk substitute. He usually sells the youngsters when three to four weeks old, when they will weigh 120 to 160 pounds. Formerly Mr. Grove sold the calves when a few days old to neighboring farmers at $4 to $8 apiece.

On account of the limited size of his dairy farm Mr. Grove has to purchase about two carloads or forty tons of dairy feed a year. He feeds this commercial dairy feed, as well as corn and cob meal and a little bran, and also corn silage, corn fodder and some alfalfa and clover hay. It is noteworthy that he annually hauls considerable waste by-products, consisting of husks and cobs, from the local cannery, which gives this material to the farmers for hauling it away. Although he only used about nine loads of the husks this year in filling his silo, on previous seasons when his corn crop has not been so good this Maryland dairy farmer has used large amounts of sugar corn husks, which are stored in the silo and which make fine winter feed for the cows.

Mr. Grove sells his milk to a leading Washington, District of Columbia, distributor who maintains a country plant in Maryland where the milk is delivered. Milk which tests 3.5 per cent. butterfat brings 39 cents a gallon in the country on the basis of prevailing winter prices, while the dealer allows ¼ cent bonus for every increased point in the fat test, so that milk like the Grove product, which usually tests about 3.8 per cent., brings 39¾ cents a gallon.

USE OF MILKING MACHINE

The miniature dairy farm operated by Mr. Grove, which in the way of earning capacity can show clean heels to a thousand-odd other eastern farms which are double its size, has efficiently solved the hand-milker shortage by the installation of a double-unit milking machine. This mechanical hired man cost, installed, with an electric motor to operate it, $536, the electric power being furnished from an electric railroad which passes by the farm. The milker has been in use for some time, and has demonstrated that it takes the place of two men in the dairy stable. At present one man operating the machine milks 77 gallons daily from 26 cows in two milking periods which aggregate about two and one-half hours, where formerly three hand milkers were required to perform a similar amount of work in the time specified. The cows produce well where the machine is used, the heifers in particular giving down their milk copiously and well. Of course, it is necessary to strip all the cows after the machine milking is completed, but this work only takes one man a little while.

The mechanical milker, where it is carefully handled and properly cleaned in the manner which Mr. Grove follows, not only reduces the hand labor expenses involved in the production of the milk, but also favors the marketing of a more cleanly and sanitary product. It also is especially efficient in sections where it is difficult to hire good hand milkers. A man with average mechanical skill can easily handle the milking machine; in fact, on many farms boys perform this work under the active supervision of their fathers or employers. On the basis of a wage of $2 a day for a milker, according to Mr. Grove's experience his milking machine saves him about $365 a year which formerly he had to expend for hand milking, so that in the course of twenty months' use the outfit will pay for itself. Even on farms where it does not directly cut down the labor bill, it indirectly is efficient, as it allows the extra hired help which was formerly used for milking purposes to devote their services to other work while the machine milker, operated by one-third the man power previously used, handles the cows.

In addition to having developed a farming business on a Tom Thumb farm which is a winner in even the free-for-all class, Mr. Grove has been a pacemaker in his locality for maintaining a sightly, prosperous-looking, attractive farm which causes the passerby to look instinctively a second or a third time. A commodious, comfortable and all-round satisfactory farm home which would be a credit to many city lots has been built from the earnings of the dairy cows, and is equipped with all the modern conveniences which make farm life happy as well as profitable. The barns and outbuildings accord with the house in efficiency. They are kept neatly painted. The fences are all in excellent repair. The barn yards are clean and free of the miscellaneous collection of odds and ends which too commonly accumulate. The machinery is well stored, and every indication is of strict business management and shipshapeness. Hence not only as a moneymaker, but also as the owner of a dairy farm which approaches a model, is John Grove, ex-school teacher and master dairyman, a leader in Frederick county, *Maryland.*

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Ten Rules for Live Stock Men

Here are ten good rules for live stock breeders, vouched for by the animal husbandry men at the New York State College of Agriculture, at Ithaca:

Be honest.

Choose a breed, and stick to it.

Breed with the correct type in mind.

Study pedigrees for inherited characteristics, relative merit and value.

Keep your herd or flock free from disease.

Develop the young animals and maintain the breeding animals through wise feeding and management.

Boost better live stock in your community.

Advertise judiciously.

Exhibit at the county, state and other live stock shows.

Remember that a satisfied purchaser is your best advertisement. So be prompt in registering and transferring animals, and make good all guarantees.

Sore Mouth Kills Many Young Pigs

A disease that may take heavy toll of the good spring pig crop is that known as "sore mouth," says F. B. Hadley, veterinarian at the Wisconsin Experiment Station. The trouble is often overlooked, because the mouth is the last place in the body that is suspected of being the seat of disease, although the germs which cause sore mouth thrive in the litter of pens and yards and even in the soil, thus gaining easy access to the soft tissues of the mouth.

The symptoms of the disease Dr. Hadley describes as inability of the pigs to nurse and eat as usual; soreness; swelling of the affected parts; ulcers or cankers from the size of a pea to that of a dime, with dark red borders and cheese-like centers; a very bad odor from the mouth; blood-tinged saliva; blood poisoning, or death after a few days or weeks, in many cases not given proper attention.

As soon as the disease is discovered, treatment should be begun by carefully removing the cheesy material from the mouth cankers and applying tincture of iodine. Then the mouth is to be syringed out with a solution of potassium permanganate (1 ounce of crystals dissolved in 2 quarts of freshly boiled, clean, warm water). Bad cases should be treated twice a day, all cases daily, until healed. Every pig in the herd should be examined and treated, if necessary, for the disease is directly contagious from pig to pig, and indirectly contagious through the teats of the sow and soiled litter. It is a wise precaution to flush out the mouths of all young pigs with the solution.

Additional measures include cleaning and disinfecting the pens and whitewashing the entire interior of the hog house, including the ceiling.

Farmers Experiment in Cross Breeding Sheep

Crossing fine wool ewes with mutton rams is practicable in northern and central Pennsylvania. Experiments were conducted on farms in these sections during the last year. In the fall of 1918 the animal husbandry extension service of the Pennsylvania State College, through farm bureaus and county agents, placed 250 flocks of fine wool ewes from Greene and Washington counties on farms that had not been raising sheep. These ewes were crossed with Shropshire, Southdown and Hampshire rams. A good market lamb resulted, and the farmer had the wool from a ewe of high-quality fleece. The flocks were in the hands of inexperienced sheepmen, and this accounts for the low percentage of lambs, the average being 80 per cent. However, sales from lambs and wool paid for the ewes in one year and left a surplus of over $1.50 per head towards paying for the feed. And the farmers have the ewes left.

One man had 50 ewes which cost him $575, raised 48 lambs, and returned a profit of $764.89 from wool and lambs. He fed grain, and took good care of his sheep. In every case the care and management showed up in the final profit, pointing to the fact that, while sheep can be made a profitable part of farm operations in many sections where they are not raised now, proper feeding and management is a dominating factor in the success of the operation.

The lambs at marketing time averaged in weight from 80 to 85 pounds, and were of a desirable quality from the butcher's standpoint. According to this the prejudice against a fine wool foundation for lamb raising is not justified, says W. B. Connell, sheep expert from the Pennsylvania State College, who had charge of the experiment. He also states that this project has established a number of farmers in the sheep business and that they are well on their way to the development of well-bred flocks of mutton sheep.

A lot of information in a small space is found on the card, "Conserve the Manure," which the state college at Ithaca, N. Y., will send you.

Pasture for hogs helps reduce the cost of pork production. Hogs may eat dirty food, but they thrive best on food which is clean.

The good dairy farmer will feed his land as well as his cows. Home-grown feeds, especially silage, help the profit side of the ledger.

The exports of condensed milk ran much higher in 1919 than in 1918. For the ten months ending October, 1918, the exports were $59,299,393. For the ten months ending October, 1919, the exports were $100,330,366.

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If it suits you in every respect, keep it and take One Whole Year to Pay in equal, monthly instalments.

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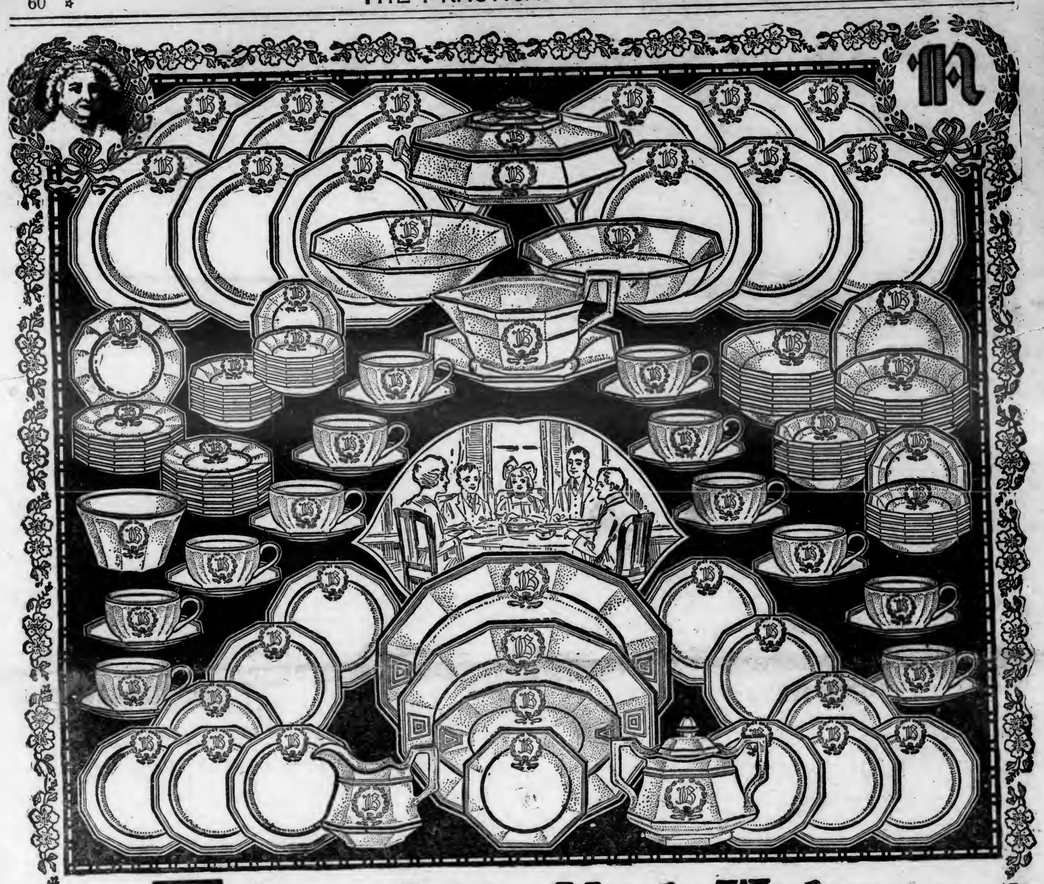

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Complete Set Consists of 12 dinner plates, 9 in.; 12 breakfast plates, 7 in.; 12 soup plates, 7¾ in.; 12 cups; 12 saucers; 12 cereal dishes, 6 in.; 12 individual bread and butter plates, 6¼ in.; 12 sauce dishes; 1 platter, 13½ in.; 1 platter, 11¾ in.; 1 celery dish, 8¾ in.; 1 sauce boat tray, 7¾ in.; 1 butter plate, 6 in.; 1 vegetable dish, 10½ in., with lid (6 pieces); 1 deep bowl, 8¾ in.; 1 shallow bowl, 9 in.; 1 small deep bowl, 5 in.; 1 gravy boat, 7¾ in.; 1 creamer; 1 sugar bowl with cover (2 pieces). Shipped from Chicago warehouse. Shipping weight about 90 lbs.

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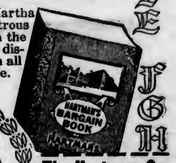

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I enclose $1.00. Send 110-piece Golden Martha Washington Dinner Set No. 327BMA17. I am to have 30 days' trial. If not satisfied will ship it back and you will refund my $1.00 and pay transportation both ways. If I keep it I will pay $2.50 per month until price, $26.85, is paid.

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Our Poultry Special

The Practical Farmer

PUBLISHED CONTINUOUSLY SINCE 1855

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THE prize winning experience letters from our readers dealing with various phases of poultry raising are in this issue. Each contains a worth while message which will repay careful reading.

PRIZE LETTER

Eggs by Parcel Post

MRS. HELEN GOODWIN

WE live one and a half miles from a town of about 15,000 inhabitants, and had always sold our eggs on the local market. We were content with the profit we made, for the hens had always been a side issue on our farm. The main income was from the milk, since ours was a dairy farm.

One day a dear friend of mine, living in the city, sixty miles away, came to our home for a visit. Seeing the sanitary way in which the chickens were kept made her love fresh eggs more than ever, and when she was going back home I found myself weakly promising to try, in answer to her earnest entreaties, to send her a dozen of those fresh eggs every day by parcel post. The more I thought of it, the more my courage grew. Upon investigation I found by purchasing cartons by the hundred lots I could get them for less than four cents each. Postage must be added also. The local market here was paying 30 cents per dozen, but my friend was willing to pay 50 for the same eggs, and if the cost of getting them to her was less than 10 cents, I would still be making a profit of almost 12 cents on the dozen, which should be good pay for the extra time and trouble I figured.

The first carton of eggs was packed and shipped within an hour from the time they were gathered.

(Concluded on page 66)

PRIZE LETTER

Kindness with Poultry

E. M. BRACKETT

WE read many excellent and valuable articles in poultry papers on breeding, feeding for egg production, etc., but I rarely note anything special about cultivating kindness in breeding poultry. I am sure the practice has more to do with egg production than is generally appreciated among the average poultrymen, but I do know the subject has more than ordinary consideration with experienced breeders of high-class poultry and every person associated with them for good results.

I have known of clumsy and indifferent assistants invariably starting a revolution every time they enter a breeding pen to clean dropping boards or cover grain in the litter; this is unhealthy. On the other hand, the personality and quiet conversation of one in whom the birds have confidence will restore to peace and quiet any panic within a very

(Concluded on page 65)

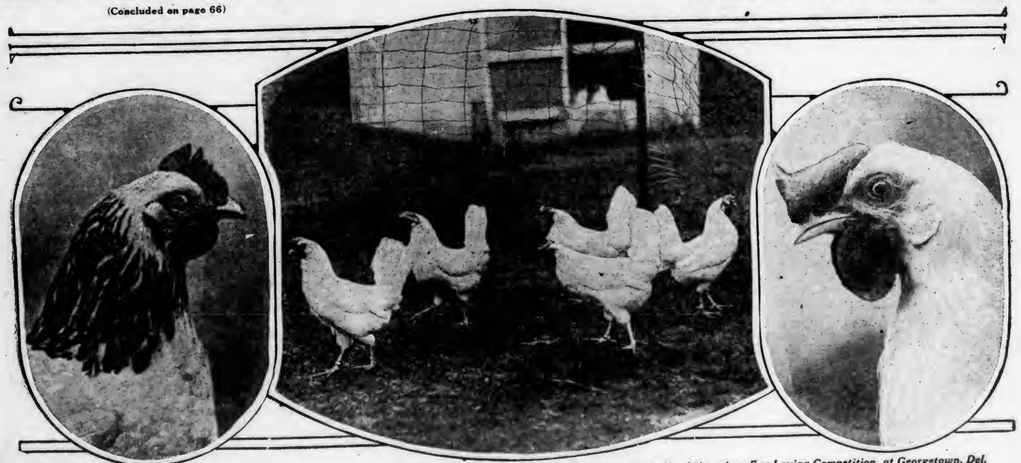
PRIZE LETTER

Cafeteria Plan for Hens

A. J. LEGG

THE high cost of feed has been one great drawback for the last few years in the poultry business. The economy of the farm flock is that a large part of the feed can be produced on the farm, and thus save the freight, hauling and middlemen's profits. Some farmers cannot bear the idea of the poultry going to the field and helping themselves to the grain, but I figure that the labor cost of harvesting is a considerable item in the cost of production, and if the poultry can be used as gleaners to gather up scattered grain, or even to harvest an acre or two of buckwheat or other grain and convert it into eggs or meat, it saves me just that much labor. Gleaning the stubble by poultry often saves considerable grain that would otherwise be wasted.

For a number of years I have sowed from two to four acres of buckwheat late in the season where the poultry can have free access, and it furnishes a feeding ground for them until late in the winter. Last August 1st I sowed two acres of buckwheat and grass with it near the poultry yard. The fall was very rainy, and if it had not been for the poultry, more than half of the buckwheat would have been lost, but I had about eighty hens that helped to harvest it, and for two months they needed no other grain feed. I sold about thirty of them at 20 cents per pound that I estimate gained at least



A Columbian Plymouth Rock, a pen of White Leghorns and a typical White Leghorn that lay above the average in the North American Egg Laying Competition, at Georgetown, Del.

one pound each on the buckwheat. Our egg record showed 42 dozen produced in October, worth in local market 45 cents per dozen; November, 34 dozen, worth 53 cents per dozen, and December, 21 dozen, worth 55 cents per dozen, or a total for eggs produced of $48.47, besides $6 for increase of weight of chickens sold. Eight turkeys and a few young chickens also got the benefit of this feeding ground, and the balance of the flock was put in much better condition. We also harvested about twenty bushels of buckwheat, and the poultry needed little if any feeding until December 1st. The buckwheat stubble is still a good range for the flock, as the timothy is green and furnishes green grass for them to pick even at this date—January 11th. *West Virginia.*

PRIZE LETTER

Turkey Methods

MRS. A. J. KAUFMANN

WE consider the cost of raising a pound of turkey meat but little more than that of raising cattle or hogs, while it sells for a good deal more. The last five years our turkeys have brought from 18 to 32 cents per pound, live weight. When we started raising turkeys, we bought three hens and a tom. The first year each of the three hens averaged fifteen turkeys apiece; other years since then we have had as high as thirty turkeys from one hen.

We allow our turkeys free range over our farm of 70 acres, and we think we owe our success with the young turkeys to the fact that they have a good deal of woodland and high, dry land in which to run; also to the care we take to not inbreed them, and in keeping the young poults separate from other fowls. We provide nesting places for the hens as near the house as possible, and yet that they may be quiet, as they like seclusion. For nests we use boxes and barrels, and place them underneath shrubbery, tall weeds and low trees in the orchard. We always gather the first few eggs laid by each turkey hen and give them to a chicken hen of large size to hatch. When the turkey hens become broody they are allowed to hatch a nest of eggs.

During the laying season the turkey hens are fed plenty of mixed grain (but very little corn), with the addition of 1 pound of air-slaked lime to every 100 pounds of grain. We use portable houses and runs for the newly hatched poults, and never let them out in wet weather or when the dew is heavy, as they are susceptible to dampness. When their wings have grown they can run all day in good weather.

Their first feed is hard-boiled eggs and sting nettle, chopped fine. This is followed by the following mixture: 100 pounds of ground wheat and oats the size of small cracked rice, 5 pounds of chick grit, 5 pounds of beef scrap, 5 pounds of charcoal, ½ pound of baking soda and 1 pound of air-slaked lime. The baking soda provides gas for the crop and intestines. We give finely chopped green feed such as lettuce, dandelion, alfalfa and sting nettle, and all the sour milk they can drink. We feel that, with the exception of what feed is used at fattening time and of course when the poults are real young, what they consume is largely of such a kind as would otherwise be wasted, such as waste grain from the fields after harvest, weed seeds, beechnuts, chestnuts, acorns, grasshoppers and other insects.

We examine all poults carefully for parasites. To kill lice we use a very little sweet oil on the head, throat and back of the neck, and insect powder on the body. *Pennsylvania.*

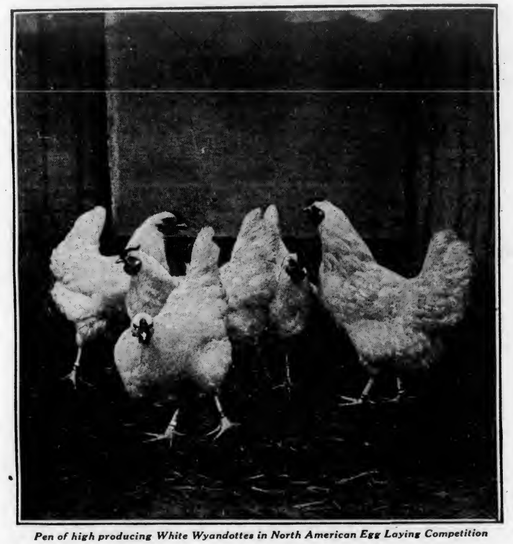
PRIZE LETTER

A Plea for Geese

MYRON C. SAFFORD

IN our section of the country there are very few geese kept and raised. We attribute this to at least two causes. Until two or three years ago they did not bring as good a price as other poultry, and many people considered it necessary to have a pond of water for them to swim in. For the past two years they have brought good prices, and as for water, plenty of good drinking water is ample for success. The feed bill—a very important item at the present time—is very much in their favor. In summer their principal feed is grass, which they will harvest themselves if given a suitable lot to run in. Another great and good point in their favor, they are very easily restrained, much easier than any other poultry. In winter, clover leaves, chaff, cull apples, potatoes, etc., are a large part of their ration. They seem to be much less subject to disease, both when small and grown, than other poultry. Hawks, the worst enemy of poultry that we have, do not bother them much. The old geese will watch and drive them off if goslings are in their care, and they quickly grow so large as to be too big for them to molest. If hatched with hens, they do not need much of a run until they are considerable size. As egg producers they will compete successfully with most breeds of fowls—if weight of eggs is the standard. Their longevity is another strong argument in their favor. They will live and do well many years after being once raised. Despite the fact that some people condemn feather beds, most people enjoy sleeping on one during a cold night. Geese will give you at least one crop of feathers a year, without injury to them if properly picked after the breeding season is over.

New York.



Pen of high producing White Wyandottes in North American Egg Laying Competition

PRIZE LETTER

Indian Runner Ducks

M. T. MAHONEY

FOR a number of years I have kept Indian Runner ducks as a side line in connection with my flock of poultry. These require but very little care, they are easy to raise, they lay well, and I dispose of my surplus ducks easily and at profitable figures. Then, the market is always good for duck eggs. Although it is not a good idea for ducks and the farm poultry to mingle in the same yard, the ducks consume food more rapidly than the other fowls, and they dabble in the drinking water continuously, thus making it unfit for other fowls, but if the poultry yard is fenced and the ducks allowed free range, they almost make their own living for about six months in the year.

I have tried many different breeds of ducks, but my experience has proven the Indian Runners are the best layers, and the young ones are easy to raise. Usually I set the eggs under Plymouth Rock hens. If the weather is dry the eggs require to be moistened with lukewarm water occasionally, as this aids the young ducks to break through the shells more readily. It is best not to feed the young ducks until they are about forty-eight hours old. Then they may be given corn bread and bran, mashed fine and moistened with sweet milk. Soon they have a ravenous appetite and grow rapidly. They require about the same attention as young chickens. Ours are kept in light wire pens so they can be moved on new ground every day. They are kept in pens until they are four or five weeks old. Last summer I raised over fifty young ducks. All of these were sold when about five and one-half months old, except fourteen I am keeping for laying purposes; so I made over $100 on my small flock of ducks last year. *Virginia.*

PRIZE LETTER

Marking Hens

MRS. MERTIE W. POFFENBERGER

I HAVE used the different kinds of leg bands, and prefer the colored ones in the shape of a key-ring, using one color one year and another color the next year. I do not hatch from the whole flock, but from a yard of selected hens, and, being pure bred and very much alike, I need an extra way to distinguish them, as a leg band can break or come off. I have found a very satisfactory way is to clip the feathers in different ways, so as to tell at a glance if any are in the flock that should not be, or not enough in. To do this I hold the hen's feet in my left hand, with head under my arm, and with the scissors clip the long wing feathers except the outer one or two, and one-half of the tail feathers on the same side as the clipped wing, or the opposite from this for another yard. The tail feathers, trimmed in different ways, are very easy to see at a glance or feel on the roost at night, and can be trimmed straight across, slant, pointed top, T-shaped, or one-half off. For another marking with the scissors, trim a few feathers near the top of the head. These ways of marking stay until the new crop of feathers grows. *Maryland.*

PRIZE LETTER

The Raising of Guineas

M. A. CROLL

GUINEAS used to be considered hard to raise and not very profitable when they sold at 50 cents per pair, and were left to incubate and rear with the old guinea hen, resulting in only a survival of the fittest. But now they are considered a delicacy, and are no longer sold in the market or to customers with the feathers on, but are dressed and sold just like other poultry.

We have no difficulty in raising them, providing they are started right. They should be put with the chicken hen that hatched them (we always set guinea eggs under chicken hens, letting the guineas

(Concluded on page 67)

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FEBRUARY 15, 1920

Our Neighbor Boosts the Tractor

THE province of Quebec, Canada, has begun an active campaign to boost power farming, and has made a contract with the manufacturers of one of the popular farm tractors in this country to supply it with several thousand annually. These are to be distributed among the farmers under a plan whereby it will be possible for every trustworthy man to secure one on easy terms. Since 80 per cent. of the people in the province are French-Canadians, they are naturally thrifty, honest and industrious, so little fear is felt as to the financial outcome of such a plan. Every means of publicity will be taken to drive home the advantages of power farming, and in view of the labor shortage, which is just as much a problem in Canada as it is here, it is expected that the advantages to be derived will soon overcome any prejudice which may now exist. Another strong point in favor of tractors in Canada, where the season is short, is the great saving of time, from three to four weeks, which it is possible to accomplish when the speed and volume of work is increased. This is just the same as lengthening the growing season an equal number of days, and often means the difference between a matured crop and a failure. When our neighbor on the north has taken such a great interest in tractors, it might be well for us not to overlook their possibilities.

Free Seeds for More Free Votes

YOUR pet canary need not suffer for bird seed this year, because the "free seeds" so long distributed by congress will in all probability reach you again. An attempt was made in the house of representatives to save $239,000 by doing without the seed distribution this year, but the motion was lost by a vote of 71 to 130. An amendment to increase the appropriation was rejected, and an attempt to have the seed distributed by the Department of Agriculture, and not on franks by senators and representatives, was ruled out of order. The seriousness with which the whole practice is regarded can be well understood from the hour's debate which took place and when the representative from Mississippi is said to have declared, amid a roar, that if the free seeds were eliminated it "would take fresh vegetables from the mouths of poor little children." As long as members in Washington think farmers' votes are influenced by a few packages of seed each spring, we will continue to see them sent out by the carload. Some time ago, among other items, bids were being asked for 70,000 pounds of beet seed, 60,000 pounds of lettuce seed and 75,000 pounds of radish seed, so we can be sure nothing new will be sent out for trial this year, and the old, threadbare instructions on the envelopes, "Please report the result of your trial to the Department of Agriculture," will add nothing except what is already known regarding these common, everyday seeds, which can be obtained a whole lot "cheaper" from a reliable seedsman, as one will then be sure of getting the crop expected.

Our Poultry Special

POULTRY raising has "come back." After a period of uncertainty, pessimism and discouragement, the poultry industry is facing one of the brightest futures in its history, and many who gave up in despair are beginning to take an interest again. The fact that it is a live subject on the farm is shown by the many letters we received for this special poultry issue, and it was only with difficulty that we selected the ones which appear as being most representative of a big industry. It would be hard to choose which one is the best, and it is indeed fortunate that each receives an equal prize. All of them have a message direct from an experienced poultry keeper, and will well repay a careful reading by everyone intent on knowing more about their business. Eggs today have reached unheard of prices, and with the great shortage of layers and breeding birds they are practically certain to sell at a high figure for at least another twelve months. The recent many poultry shows have demonstrated how the interest in the industry is reviving by the public's large attendance and the full entry lists. In this connection it has been noteworthy that the general-purpose breeds have been in the majority. The old-time strictly "fancy" shows are giving way to "utility" events, and beauty has to be coupled with ability, to win and maintain popular favor today. With the hatching season just ahead, it is a shortsighted person who is not preparing to take advantage of present conditions and bring out all it is possible to properly care for.

Our next issue, March 1st, will be our annual Garden Special, and letters for it must be sent immediately, as we cannot use them later than February 19th. Our Live Stock and Dairy Special will appear March 15th, and we should have all letters intended for it by March 1st. A careful reading of this issue and our Horticultural Special of January 15th will give a better idea of what we need for coming specials than we could describe in writing. For each letter we use we will pay one dollar, and return any we cannot use if postage is enclosed with them.

Potatoes to Fight Potato Wart

THE latest move to combat the ravages of the potato wart disease, which is thoroughly established in certain parts of Pennsylvania, is the importation of a ton and a half of English seed potatoes which are "wart immune." Since the germs which cause the trouble from this disease cannot be eradicated by any of the usual methods of crop rotation, the bureau of plant industry at Harrisburg is going to introduce the immune seed. When Dr. Sanders, the director of the bureau, was in England last summer he arranged for the importation of the seed. One ton of it is known as the Edsell blue variety, and there are about a hundred pounds of each of eleven other English varieties which are to be tested here. There is a possibility that a promising new variety for this country will be discovered in this lot of seed, but the chief idea is to get a variety which will grow clean tubers even in the infected soil. The state department of agriculture was recently commended by a meeting of scientists in Washington for the way it has handled the potato wart situation, and while the regulations may be a little severe in some individual cases, they are a great protection to our industry, which is of far more value than the interests of one county. It is in emergencies of this kind that the value of trained scientists makes its impression on agriculture, and the few men on the farm who still refuse to see what use such men are can well stop to consider where we would be if such scourges as European potato wart were allowed to go their way unchecked.

New Secretary at Washington

WE have a new secretary of agriculture at Washington, and all farm interests have great hope in his ability to see clearly and act understandingly on agricultural matters. Mr. E. T. Meredith, a well-known Iowa farm paper publisher, has been selected by President Wilson to succeed former Secretary Houston, who was made secretary of the treasury when Mr. Glass resigned to serve his state in the senate. Those who sat with Mr. Meredith through the sessions of the recent industrial conference at Washington have high regard for his grasp on the big questions of the day, and the business acumen which he will bring to the office is well known. It is a pity that he comes to the office so late in the administration's term, although he still has time to put his impression on the work and attitude of the department. Mr. Meredith is fully acquainted with the farmers' problems, as he has risen by self-efforts from a penniless farm boy to agriculture's representative in the president's cabinet. He has a wonderful opportunity now, and we hope and believe he will be able to show us what a man with vision can accomplish.

Tomato Growers Join the Procession

ANOTHER fingerboard pointing to the general organization of farmers' interests is the dispatch which comes from south Jersey telling of the Tomato Growers' Association. It used to be the common practice there for the canneries to contract for tomato crops, before the seed was planted, for so much a ton. Sometimes the price received was higher than that which prevailed at picking time, but more often it was less. Last year, due to the wet weather, the growers who contracted early in the season for $18 to $20 a ton for their crop came out at the small end, and they do not intend to be caught again. The plan being worked this year is to have growers "pledge" their crop to be sold by a selling agent for the best price obtainable when it is ready, and it is expected that 1000 growers can be found in the five southern counties who will do this. An annual membership fee of five dollars is being charged for administration expenses and the employment of a selling agent. An arrangement of this kind will give confidence to the tomato growers in a way which will build up the industry and eventually make the market better for the canners by encouraging a regular planting. It is merely a following out of the process which the milk industry has gone through by organizing the producers so that they can barter with the buyers who have long since been organized.

Bulletin Helps for Farmers

Farmers' Bulletin No. 1069, "Tuberculosis in Live Stock," is a clear, frank statement of the detection, control and eradication of this common disease. No one can read the thirty pages and examine carefully the many illustrations without feeling that it is time more of us awoke to the seriousness of it and take steps to eliminate it as has been done in nearly 1000 accredited herds.

Anyone interested in community buildings can receive a lot of definite information from United States Department of Agriculture Bulletin No. 825, entitled "Rural Community Buildings in the United States." This bulletin has numerous illustrations, and tells how many of the buildings were financed, built and maintained. It also contains a list of 256 buildings which were visited or studied through correspondence.

Either of the foregoing farmers' bulletins may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

PRIZE LETTER

Ten Dont's in Turkey Raising

FLORA M. TUCKER

(1.) Don't wait till the turkeys have hunted up nests for themselves, but provide them in as acceptable places as possible. If a turkey has "beaten you to it," don't break up her nest. Remove her eggs clandestinely, leaving a nest egg in place.

(2.) Don't hatch too early. The cold, wet weather of early spring in mid-Atlantic states is very disastrous to young turkeys. If your hens lay in March, stand the eggs on small end in bran, sawdust or wrapped in paper, and store in cool, even temperature. Turkey eggs can be kept two or three weeks without lessening their hatchability.

(3.) Don't hatch eggs from immature birds. In nine cases out of ten you will waste time and money, as the poults will be weak and will easily succumb to disease.

(4.) Don't use chicken hens as mothers, though they may serve as incubators. A turkey often becomes broody after the first clutch of eggs. If she cannot cover all eggs on hand, set a large chicken hen on six or seven eggs. Then when all are hatched, give them to the turkey. A chicken hen is too fussy, and does not wander with her flock, but stays near the hennery looking for feed, all of which is bad for poults.

(5.) Don't, *don't* overfeed. A very light breakfast will suffice, with a more generous supper when the flock returns from foraging. If their crops look packed full, give water or sour milk and a very few oats scattered in straw. Overfeeding will surely cause indigestion, liver trouble and death.

(6.) Don't let turkeys, young or old, out in early dew nor in damp weather. A well-known turkey raiser of many years' experience says: "A wet turkey is as good as a dead turkey."

(7.) Don't keep turkeys in damp houses. A dry dirt floor, sprinkled often with lime, I prefer to one of boards or cement.

(8.) Don't try to raise turkeys in wet, insanitary runs. Use plenty of sifted coal ashes. Turkeys love them to eat and dust in.

(9.) Don't let lice worry and weaken the turkeys. Dust mature birds thoroughly with good lice powder. Where poults are two weeks old, put a *very little* lard or butter between the wing flights and around vent. Don't use too much, or it will kill poults.

(10.) Don't forget that there are ups and downs in every business. Turkey raising has its share of downs, but when checks varying from fifteen to fifty dollars come in for your pure-bred birds and eggs, turkey raising takes on a roseate hue. *New Jersey.*

PRIZE LETTER

Points on Selecting Layers

G. FRANKLIN SMITH

Doubtless, trap-nesting is the best single method of all to produce an egg-laying strain; however, not all of us will follow this plan. By a few simple rules, we seem to have gained very satisfactory results, and these practices are also good even with trap nests.

After the pullet year we cull out every hen commencing to moult before September 1st (as soon as she stops laying); later we examine the whole flock of layers several times before winter, and every hen in which the space between the tip or rear end of the keel and the pelvic bones does not readily admit at least three fingers of the closed hand, we discard. We refer to larger breeds, as Minorcas and Orpingtons. Leghorns might require a minimum of two fingers—no less—to satisfy us. If possible, we never dispose of a hen while laying. How can it be told with almost positive assurance whether or not the hen is laying? If the space between the two pelvic bones admits no more than one or two fingers, and these bones are tight, not once in one hundred times, probably, is she laying. If three fingers can be thus placed, and the bones are freely movable, it is almost positively certain that she is laying or has laid within a day or two. If there is considerable space, but slight resistance is encountered, when suddenly adhesions seem to give way, with perhaps a little squawk or "exclamation" from the hen, she has most likely stopped laying within a very short time, and, we think, better be "condemned." Ordinarily we keep no hens after two laying seasons. *Delaware.*

PRIZE LETTER

Selecting Eggs for Hatching

MRS. C. S. FERRILL

Four points—age, size, shape, and condition of the shell—are absolutely essential in the selection of eggs for hatching. First, the eggs *must* be fresh, the newer laid the better. Eggs kept for long periods, and especially if in one position, "settle," that is, the yokes adhere to the shell. Moreover, the life germ dies. Eggs for hatching should be of an average size for the breed that laid them. Of the two undesirables, however, I should prefer a very large to a very small one. A normal-shaped egg is oval, that is, round, but not perfectly round, rather inclined to be long, and slightly larger at one end than at the other. An abnormally shaped egg, that is, one which is decidedly round, very long, or one with bumps or ridges on it, is certainly undesirable for incubation. Such eggs seldom hatch at all. They may have chicks, but the chicks rarely live to get out of the shell. A rough or a thin-shelled egg, or an egg the shell of which has a "seam" or defect in it, is undesirable for hatching, as they are very likely to become broken during the period of incubation. Pullets' first eggs are not to be recommended. While they may be fertile, the chick is seldom strong enough to break the shell and come out, and even when it does it is often a weakling and lives only a short time. With such eggs the chick often "pips" the shell, but dies before it hatches. A pullet should have laid several dozens of eggs before any one of them is used for hatching. Eggs from one and two-year-old hens are perhaps best of all, as the hen is then in her prime, both as to production and fertility. Eggs from stolen nests are undesirable, as one cannot be sure of their age.

Kentucky.

Plenty of range develops vigorous breeding stock

PRIZE LETTER

Sour Milk and Eggs

W. G. YEAGER

We have been keeping chickens for the eggs as the main revenue for years, and have learned some valuable lessons. The most valuable perhaps is the value of sour milk in egg production. We plan to have our pullets of the proper age and condition at the start of the laying period, and then with a proper balanced dry or wet mash, according to the weather conditions and the season, at least two dry grains and plenty of sour milk (either butter milk or clabber skim milk), the matter of eggs has been solved with us when the price went to the top each year. We would hesitate to attempt to feed chickens for eggs at the present prices of feedstuffs without some form of sour milk to use in the daily ration. We either feed the milk alone in sanitary feeding vessels, or use it in the wet mashes, and in quantity in proportion to our supply, up to what they will eat in a couple hours each day.

The sour milk not only carries protein in a readily digestible form, but other properties that exert a beneficial physiological effect upon the health of the fowls. I have been called in to suggest improvements in the ration for layers when the results were disappointing, and usually found the absence of sour milk the principal error, and when this was corrected the production of eggs would jump up from fifty to over a hundred per cent. *North Carolina.*

George Livingston has been appointed chief of the bureau of markets, United States Department of Agriculture, effective January 27th. He has been acting chief of the bureau since July 1st, when Charles J. Brand resigned.

LIBERTY-MARVEL BROODERS

Marvel Coal Burner
With Liberty Automatic Regulator. Prices, $19.75 to $24.75.

LIBERTY-MARVEL Oil Burner
Prices $16.50 to $23.50
BLUE FLAME Smokeless
Perfect Automatic Regulation

INTER-CONVERTIBLE
Any coal burning outfit can be converted into an Oil Heated Hover by introducing the Liberty Marvel Burner. Price, $10.50.
Ask for particulars
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MOTTLED ANCONAS

EXCEL IN BEAUTY HARDINESS EASY KEEPING EGG PRODUCTION
PRODUCE LARGE WHITE EGGS AT LEAST COST PER DOZEN
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PRIZE LETTER

Don't Expect Miracles from Incubators

FRANK G. DAVIS

After one acquires a little experience with incubators and the fact becomes generally known in the community, every prospective poultryman invariably wants your opinion as to which is the best incubator to buy. When it comes to selecting an incubator, however, there are so many good makes on the market that it would be out of the question to single out any one as "best," because it is largely a matter of opinion. One man will get a good hatch from a machine, and will naturally boost that particular make to the skies, while another will get a poor hatch from the same kind of incubator and will knock it. I've seen it happen.

Of course, one should not go about the purchase of an incubator blindly. Were I selecting another one, I would get the literature put out by the different manufacturers, being sure to select only the reliable concerns, and make my decision after weighing every point. Personally, I prefer the hot-water type, but only because I have had no experience with the hot-air machines. Regardless of what type you select, one cannot go far wrong in buying any machine put out by a reliable manufacturer. One should remember that successful hatches are not based entirely on the incubator you own. Too many pay little attention to the selection of their eggs, and when they get poor hatches, blame it on the machine, when in reality that has nothing whatever to do with the failure. Others are continually tinkering with their incubators—actually courting trouble. I give the manufacturer the benefit of knowing more about his machine than myself, as he has put it to every test, so I say: Stick strictly to his directions. If every conceivable point, from egg selection to the various conditions under which the hatching is to be done, was more carefully considered, and not as much reliance placed in the incubator itself, a great many more successful hatches would be made, for the very best makes will not perform miracles. *Virginia.*

Kindness Pays with Poultry

(Concluded from page 61)

few seconds. I believe it's an obligation we owe the hen to make her sing when her roosts are being cleaned, and an obligation on her part to straightway lay an egg in the fresh, clean litter of her nest. There is not much depth of wisdom in the instincts of a chicken, and although often aggravatingly stubborn, gentle perseverance will win the palm over bombast every time.

Last year we had two game pullets that had strayed away to some quite distant buildings. They were wild and very shy of anyone, and we got no eggs. I determined to make a conquest of these outlaws and bring them back into the fold. In less than three weeks they were meeting me and flying on my head and shoulders, like stunts in a circus. We soon got some eggs, and they hatched chickens for us. These birds are now owned by a farmer tenant at Nashport, Ohio, who says: "Minnie and Winnie are the same old pets, and still laying eggs." Another illustration of kindness versus dollars and cents!

Last summer we raised five geese that came for me every evening, when the sun went down, to pilot them home for the night. They knew the way, but seemed to want me to "see them home." This parade was quite a remarkable stunt for entertaining company all summer. It was not a trick of feeding (as geese do not eat much grain in the good, old summertime), but simply a result of a kind and gentle association ever since they were born. No increase in egg production in this case, but they all stayed by us to a finish, while the beautiful Muskingum river is not more than 100 yards distant.

I have written more than I intended, but the simple illustrations will do no harm to those who may read. I am very sure every successful poultry breeder would verify the value of kindness to animals in the poultry world. *Ohio.*

Good Word for Mottled Anconas

R. W. VAN HOESEN

Mottled Anconas are not a new breed, as they have been kept in the United States for thirty years. During the past five years the breed has very much engaged the attention and interest of poultry raisers. Anconas are a Mediterranean fowl, bred in but one color scheme—a black background flecked with pure white tips on about 20 per cent. of the feathers, which gives them a very attractive appearance. Their legs are yellow, or yellow mottled slightly with black. Both single and rose-comb varieties are bred. In weight the hens should be one-half pound heavier than a Leghorn hen. They lay white eggs, and are particularly an egg breed. The little Ancona chicks are canary color, with black backs, and a brood of them remind one of a bed of pansies. They are extremely hardy, and quick to develop. Pullets begin laying when twenty weeks old, and frequently earlier.

At the Missouri State Experiment Station, Anconas produced the largest number of eggs, per hundred pounds of feed consumed, of any breed, and their eggs weighed most per dozen. This record was duplicated two years in succession at the British Columbia government egg-laying contest.

Anconas should appeal to farm poultry raisers, because their color blends so with the fields that they are in little danger from hawks, and they are great foragers.

Poultry fanciers have done much to popularize Anconas during the past two years by co-operation in club activity and making them one of the leading classes at the poultry shows. This has brought the breed into prominence, and the many beginners have made Anconas a profitable breed to keep because of the great demand for breeding stock and hatching eggs.

New York.

The codfish lays a million eggs while the helpful hen lays one; but the codfish does not cackle to inform us what she's done; and so we scorn the codfish coy, but the helpful hen we prize, which indicates to thoughtful minds it pays to advertise.

At a recent meeting of the executive board of the Ohio Farm Bureau Federation it was recommended that all county farm bureaus make $2 a minimum membership fee. The minimum is now $1.

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A farm house during these severe winters is only half-a-home indeed, unless it is comforted cheerily throughout with an IDEAL-Radiator Heating Outfit. Warms every nook and corner, keeps floors and halls free from chills and drafts. In fact, makes the whole house inside like summer time. The IDEAL-Arcola Radiator-Boiler does it.

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TESTIMONIAL Cerro Gordo, N. C., Sept. 19, 1919. Dear Company—I have just today received my Phonograph—and must tell you for a fact I am sure more than delighted with it. Many, many thanks for your honesty. I remain your friend till death, Mrs. Fannie Rogers, Cerro Gordo, N. C.

FREE TO YOU—SEND NO MONEY Just your name and we will send you 24 of our Art Pictures to dispose of on special offer at 25c each. Send us the $6 you collect and for your trouble we will send this new improved E. D. L. Phonograph and a selection of 6 records, free for your trouble. You can dispose of pictures and earn this great machine and the records in a few hours' time. Address
E. D. LIFE, 337 W. Madison St., 2 T 9 CHICAGO

PRIZE LETTER

Building Houses for the Hens

J. A. MARTIN

I plan my coops for units of one hundred hens, and have found the ones twenty by twenty feet square a practical size. I make mine with a shed roof sloping from seven to five feet above ground, with two single-sash windows in each end, and the five-foot wall enclosed with netting. The rest of the coop is battened tightly. The door is put at the extreme high corner in the end. Inside, about four feet from the door the roosts begin, and stretch to the farther end. In the open area at the entrance I place the drinking fountain. The roosts cover about four feet in width, and the rest of the floor is covered with litter, usually corn husks, for scratching. I prefer concrete floors, but am still using some earth ones. Nests are made from orange boxes, and are placed in tiers along the ends. Mash boxes go on a small platform in about the center of the building.

In one coop I built I placed the windows too far toward the roosts, not only robbing the scratching compartment of light, but allowing any passing lights of night to shine over the roosts, making the fowls restless and noisy. Another coop, built before I purchased the farm, has windows directly above the roosts, and it is almost impossible to catch or handle fowls in that coop on moonlight nights.

I put dropping boards in all my coops as I built them, but have removed them, finding it much easier to fight lice without them. The droppings fall instead into an earth pit, and are not so unpleasant to remove as from the boards, and more of the fertilizing value is conserved.

PRIZE LETTER

Saving the Spoiled Ear Corn

PERCY W. SHEPARD

Sometimes one has a few bushels of ear corn which has become moldy, perhaps from being immature when harvested or when killed by frost, or from being piled in a damp place or in too deep a heap where it could not dry out properly. This would, of course, be unfit for poultry feed. It would be dangerous to give it to them, even in small amounts. The question is: What is to be done with it? One does not want to throw it away and make no use of it at all, and yet it is not safe to feed it to any animal whatever. Well, here is what I would do with it: Make charcoal of it, or char it by heat until it would be safe to feed. In that way it would not be a total loss.

Fowls need charcoal. In fact, charcoal is very necessary for them, and one should keep some of it in a hopper in the poultry house all of the time. They will eat it as their appetites dictate. Charcoal is a purifier. It helps to correct digestive disorders. Charcoal absorbs odors, and, while valuable for that purpose in a damp or musty cellar or room, we must remember that it will also absorb odors in the poultry house after remaining in the hoppers for some time, so it is advisable to give it only in such amounts as may be consumed within a short time, thus replenishing the supply in the hoppers often with a fresh supply. It may be kept in the storehouse in tight boxes, cans, etc., so that it remains sweet. An ordinary forty-quart milk can makes a good container for storing it.

In charring the moldy corn, one may hold the ears over the fire in the kitchen stove by tongs or a wire screen fashioned into a sort of a basket if only a small amount is to be used at a time. If more is to be prepared, then a fire in a forge in the shop or an outdoors fire may be used to scorch it. In charring it I do not think that it is necessary to burn it too much. Just enough to destroy the mold and blacken it is all that may be required. It should be charred on the cobs, not shelled first, and then may be broken in short pieces and given to the hens to pick off. It pays to save all feeds now, and yet one must feed safely.

Pennsylvania.

PRIZE LETTER

Successful Ration for Poults

IDA E. BLOYE

More little turkeys die from improper feeding than from any other cause. Either the wrong kind of food is given them, or they are fed too much at a time—often both. A balanced ration, composed of mixed ground grains with a portion of beef scrap in it, fed from the time the poults are two weeks old till nearly grown, is one of the most essential conditions if one is to succeed in raising turkeys.

We lose very few turkeys of late years. We feed chopped hard-boiled eggs the first few days, with plenty of crystal grit, feeding five times a day. After the third day we add a few dry bread crumbs, increasing them and decreasing the egg till turks are two weeks old, when we begin feeding the following mixed mash: Two parts cornmeal, two parts wheat bran, one part oat flake, one part middlings, one part beef scrap and one-fourth part ground charcoal. Mix all together dry. When ready to feed, take a little in a dish, dampen so it will be dry and crumbly (not wet and pasty), and feed, adding a little to the chopped egg night and morning for a day or two. Then feed the mash alone. When about ten days old we begin feeding grain at night. Buckwheat we find agrees with them the best. Feed only a little at a time of any feed. After two weeks old, feed only three times a day. We always water them after feeding, but are careful not to give them too much.

A friend whom I told of the above mash of mixed ground grains and beef scrap told me this fall she had had the best success this summer with her turkeys she had ever had, and she thought it was all owing to the mixed mash.

New York.

Selling Eggs by Parcel Post

(Concluded from page 61)

At the dinner table the next day, while we were talking about the eggs and wondering if they had met with misfortune, a long distance call came. My friend was delighted with the nice, fresh white eggs which reached her so promptly. If I could send her twelve boxes just like those, it would solve what she was to furnish, or, rather, donate, toward the church market on the coming Saturday. Could I? Yes, and I did. They were sent directly to the church where the market was held. Secretly I was hoping someone might notice my return address on the left-hand corner of the box, if they were pleased with the eggs, and send for some more. I was making a fancy profit, and eggs were plentiful. I was quite excited, and think I must have read that first letter, which contained an order for a week's supply of eggs, with its check attached, over at least three times before I put it on the clock shelf—the place of safe keeping in our home.

Before the end of the second month there was a happy excitement in our home that bespoke the elements of a swiftly growing business. Our business had increased, and it wasn't possible for us to supply all of our orders. Great care had been taken with every order. Since looks play an important part, in no way did we neglect this or any of the details that might make our product reach our customer in a most satisfactory manner. We had very little trouble with our customers, but when we did we made it satisfactory, even if we lost the entire lot or shipment in question.

We had 300 hens, and for the first month our total receipts for shipped eggs were $168, plus $3 receipts from culled eggs, making $171. Our total expenses, including feeds $13, cartons and postage $26.88, and time at $1 per day, $30, were $69.88, so our month's return was $101.12.

Indiana.

White Muscovy ducks find high favor some places

Public markets, both municipally and privately owned, have proved to be such important factors in the urban distribution of foodstuffs that the bureau of markets of the Pennsylvania Department of Agriculture is making a survey to find out how many public markets there are in operation throughout the state. Letters and inquiry blanks have been sent to the mayors or presidents of council of all cities and incorporated places in Pennsylvania.

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FOR SALE Beautiful pair White Angora Goats, coming two years old. Write. **Chas. McClave, New London, Ohio.**

PRIZE LETTER

Combating Poultry Lice

SARAH L. CALKINS

We find little trouble in keeping lice away from our chickens by keeping a good-sized box filled with unsifted wood ashes for a dust bath. Some advocate mixing a little kerosene in the ashes to keep the lice away, but we have never found this necessary. In the absence of wood ashes a dust bath made from a combination of road dust and air-slaked lime will answer the same purpose. But a good dust bath is essential at all times to the health of one's chickens for highest efficiency. When putting hens to set in the spring of the year, if ashes are generously sprinkled around the outside of the nest box it will keep mites away from the hen, and it is a good idea to scatter ashes around the roost supports if there is any suggestion of mites in sight. They cannot navigate in ashes.

The first noticeable manifestation of head lice in little chicks, as a rule, is a quick shake of the head, and when the nervousness appears among them one is pretty sure to find fat lice a-plenty on their heads and necks. The fatality percentage of our baby chicks is usually small, and the following is about the way we fortify them against their common enemy, lice: When the chicks are less than a week old (before waiting for a danger signal) the mother hen is thoroughly sprayed with a commercial lice killer. Instead of the old, tedious way of greasing each individual head after the lice have made their appearance, which sometimes proves fatal, this one spraying is sufficient, and saves time, labor and life. If incubator chicks are kept away from the other chickens and the English sparrows, they are not liable to be troubled with head lice.

New York.

Lessons from the Egg-Laying Contest

F. V. L. TURNER

Eight successive years of egg-laying competitions prove several things about the hen that are detrimental to egg production beyond ordinary, just as several other things are more potentially verified in the matter of increased ability to produce above the average. In the eighth year of the *North American* egg-laying contest one hen, perfectly normal in action, appearance, health and appetite, never laid an egg in the three hundred and sixty-five days she participated in the competition, nor has she laid since. Supposedly she was a pullet just about mature when she entered the contest, November 1, 1918.

This hen will shortly be killed and dissected to ascertain, if possible, the reason for her inability to lay. To all intents and purposes this bird gave every indication of fecundity. Shortly after she was entered in the contest she put on a decided masculine appearance, grew a very much larger comb and wattles and a pair of spurs each an inch long.

On the other hand, one bird laid 272 eggs, and five birds, one pen, laid 1171 eggs. Two hundred eggs were common to many birds, and one hundred eggs were common to a majority of the five hundred birds engaged. The total eggs laid by the entire lot in the year was 76,287 eggs, an average of 152.57 eggs per bird. When it is remembered that liberal figures give the average hen but 70 eggs in a year, and that commercial egg-producing plants must get at least 144 eggs for a safe profit, it immediately becomes evident that great strides forward have been made in increasing the hen's fecundity when an average of 152.57 can be secured by breeding.

One of the strangest contradictions to farm enterprise is found in the hen. No sane farmer would breed his best milk cow to a bull from a low-producing mother; his hogs are bred for certain qualifications, while his hens are left to work out their own salvation. If they lay, fine! If they make their keep, oh, well——!

Economically the hen is a greater agent for profit than ever before. America, the United States, is credited with a cow population of 26,000,000; Europe is said to have lost in her recent military activities the tidy sum of 22,000,000 head. On this side the loss is felt only through the increase in beef cost to the consumer. Overseas demand for American beef means greater use for hen meat and eggs here, now and for years and years to come.

For every reason of profit the hen should have the best of care and feed, and likewise should have enough attention to insure better breeding, that greater production may come about.

PRIZE LETTER

Vegetables for Winter Layers

PERCY H. TUCKER

There are many things that go to make poultry raising a success. Feeding them vegetables in the winter is one. You have perhaps noticed how crazy the hens are after the first green grass in the spring. They need it and want it just as much in winter. While there are not many of us who have sprouting machines to give our hens green matter, all of us can arrange to give them some sort of vegetables. Such roots as beets and turnips can be stuck on spikes driven in around the hen yard at different intervals. This way it is always before the hens, and they don't get it mixed in with the dirt. Cabbage can be given them in the same way. They eat it with much evident relish. Many farmers have quite a few small potatoes. Boil these and mash them up with equal quantities of bran. Feed this warm, feeding it three or four times a week. This will improve their condition and increase their output of eggs, and is worth a trial. Feeding vegetables to hens is certainly something that should not be overlooked.

Rhode Island.

The Raising of Guineas

(Concluded from page 62)

have only the last of their laying), in a small enclosure on the ground, as they are like young mice, and there is no keeping them with the hen until they grow to know her. We use a large cheese box with the bottom out and a wire over the top, and do not feed them anything but sand until thirty-six hours old; then we give them bread crumbs, and keep water before them all the time, but so they can not get into it.

When a week old they may be left out with the hen, and by that time they seem to realize she is their mother, and keep, oh, so close to her, even after she goes to laying!

Our only trouble was in finding the guineas' nests, for they, like the turkey, always try to hide when laying, and the only way we can beat them is to keep them in until after they lay.

Pennsylvania.

Stand by the hen, handle her right, and she will lay eggs with all her might.

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PRIZE LETTER

Water for the Hens

J. M. GRAYBILL

The problem of keeping water before our hens in freezing weather has been satisfactorily solved at last. A few years ago we bought a galvanized top-fill fountain with lamp beneath, which was a joy for a time, but, in spite of care, lasted only two seasons, and was more troublesome to care for (besides the expense) than my home-made contrivance, which is on the principle of the fireless cooker. To make one requires two containers (either wooden boxes, pasteboard cartons or tin buckets may be used) and a wooden box large enough to hold these containers, with room for several inches of leaves, sawdust, tanbark or other non-conductor packed tightly under and around them. In one of these containers a closely covered bucket of boiling water is placed, while in the other is a bucket or crock of water the proper temperature for fowls to drink. The cover to larger box is sawed short enough to leave the drinking vessel uncovered. To keep hens off of box, two boards are nailed to this cover and to each other to form a steep sloping roof. This arrangement also keeps the drinking water cool in summer if kept in the shade.

Virginia.

PRIZE LETTER

The Ounce of Prevention

E. M. ANDERSON

Many poultry papers seem to have the idea that mites and lice are a necessary evil, but I have never found it so, though I began keeping hens in an old poultry house that had previously been terribly infested with them.

I had a small hand sprayer, the tank of which holds not over a quart. After cleaning just ordinarily well, I filled my sprayer about half full of kerosene, and proceeded to spray every nook and corner of the interior of the building, giving all cracks and crevices a little extra soaking. It is surprising how fast a kerosene spray covers surface; its natural tendency to spread simplifies the task wonderfully. I did no more spraying that year, but every spring thereafter, just as the weather began to get really hot, I repeated the process, and I never saw a louse or any indication that one existed. A pint or less of kerosene, even at the present price, is a very small annual expense to balance against the damage done by hordes of vermin.

New York.

PRIZE LETTER

A Few Turkey Pointers

MRS. C. C. CONGER, JR.

I usually raise to maturity from twenty-five to fifty turkeys each season. I became disgusted years ago with scrub stock, and keep nothing but the best blood of Mammoth Bronze, introducing new blood through toms every other year. I gather the eggs each day, keeping them in a room that registers about 60 degrees. While I set some chicken hens with turkey eggs, I depend principally upon turkey hens to do my hatching and rearing of the young turks. I give the turkey hens, depending upon their size, from fifteen to twenty eggs, after carefully preparing their nest. Long before the little turks are out I have their coop prepared, made from a large store box with one side opened and covered with fine netting, all but door. I also have top of box covered with felt roofing. I face this box to the sun, and cover the bottom with dry sand.

Little turks are given their first feed of hard-boiled eggs and dry bread when about thirty-six hours old. Table scraps are added by degrees, but never sloppy material. Later on I feed scalded onion tops mixed with table scraps. I keep my coops clean and dry at all times, and never cease fighting lice. This method of rearing turkeys has given me excellent results, and my losses are never heavy, as is the case with many of my neighbors. I give my little turkeys all the air and sunshine I can, but never let them out in the wet grass.

Virginia.

Culling 18,000 Hens in Penna.

Two hundred and forty-seven culling demonstrations were held in sixteen counties of Pennsylvania last year by poultry specialists in the extension service of State College to show how non-layers may be detected by noting certain physical peculiarities. Over 18,000 birds were examined. About two-thirds were classed good, the others being medium or poor. A good hen will lay 150 eggs a year or better; a medium hen, between 120 and 150 eggs, and a poor hen, less than 100 eggs. The total number of good hens found in the demonstrations was 12,565; medium hens, 270, and poor ones, 5775. It was found in nearly every demonstration that the proportion of good birds to poor ones was fairly constant, showing that profitless hens may be found anywhere. There were some exceptional cases where owners had selected, bred and cared for their stock so well that all birds were high producers.

Most of the birds examined were either very good or very poor. Usually a hen is either good enough to keep, or so utterly worthless that her immediate absence in the flock is the best thing for the owner's pocketbook. The middle ground, where there might be some question about the hen's value, is sparsely populated. More than 5000 poultry owners, representing nearly half a million hens, were present at these various meetings. At each demonstration information about culling and selecting hens was given. A flock should be culled every two weeks during June, July and August. Hens that stop laying and begin to shed their feathers at this time are thrown out. The non-laying hen usually has a small and hard abdomen and a small, dry, yellow vent. Yellow shanks and beaks during these months indicate low producers. All weak or sickly birds should be discarded. Retain only those of high constitutional vigor. It will pay to keep hens for layers if they have shown their worth by continuing to lay after September 15th. If they keep it up until October 15th they should be retained for breeding purposes.

Use of Poultry Manure

Poultry manure is quoted in some trucking sections at $12 to $15 a ton, and if well cared for it will have a plant food content which makes this a fair price as compared with the cost of commercial fertilizers. Figures show that from 100 hens about two tons of dry droppings should be collectible under the roosts each year, or 40 pounds per bird. Probably nearly as much will be in the scratch litter where the chickens are confined all or most of the time. This is a by-product of the industry worth considering.

The plant food in the droppings is readily soluble and quick acting, but, like nitrate of soda, it is not a complete fertilizer; the percentage of phosphoric acid and potash is low. The manure alone will stimulate a rank growth of leaf and vine, but to produce fruit or grain it should be reinforced with phosphoric acid.

According to the specialist in soil fertility of the New Jersey State Agricultural College, the best reinforcing material is acid phosphate. To make a fertilizer corresponding to a 3-8-1, which would be suitable for most crops, acid phosphate should be mixed with the clear dry droppings at the rate of one pound of phosphate to four or five of manure, or 500 pounds to the ton. Such a mixture has just about half the strength of the commercial 3-8-1, and should therefore be used in about double the amount per acre.

The phosphate also helps prevent fermentation and the loss of ammonia from the manure. Land plaster, or gypsum, is sometimes used for this purpose, but the phosphate is nearly two-thirds gypsum, and the gypsum contains no plant food. If one pound of phosphate is scattered under the roosts weekly for every five birds, it will give about the right proportion and its full efficiency as a preservative will be secured.

Testing the Incubator

Many valuable hatching eggs are frequently spoiled in the early spring because of the failure of the poultryman to give his incubators a preliminary test before the eggs are placed in them. The poultry department of the New Jersey Agricultural Experiment Station recommends that the following precautions be observed in preliminary operations: First, the incubator should be thoroughly cleaned and disinfected inside and wiped off outside. All metal parts should be oiled. It should then be leveled to make certain that it stands firm and true. Next, the lamp should be started and the machine heated up to the desired temperature and run for about a week before the regular hatching eggs are put in. During the preliminary operation the temperature-regulating device should be carefully adjusted.

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Worth While Poultry Suggestions

F. V. L. TURNER

Apply to your state agricultural experiment station for information concerning the vaccination of poultry for chicken pox.

Insure yourself a better egg yield by increasing your selective powers in picking good males.

Start the youngsters off on dry food, and they will not suffer later while you try to starve them into eating it.

Startling news! A pullet lays more eggs if her father is or was the son of a heavy layer whose father was, in turn, from a heavy layer.

Government control of wheat ceases soon. What is the answer to the high cost of feeding animals?

Eggs sold at $1.25 in New York this winter. Of course, New York is a large city, but what does the producer care about population if he makes a fair profit on his eggs?

Laying pullets fetched good prices last fall. Hens, real hens, worth while to breed from, will be scarce at $5 each this spring. Pedigreed breeders will fetch more.

Those pullets you trap-nested, that you found to be good fall and winter layers, should be bred back to their male parent this spring by all means. Some of the offspring may be weaklings; kill them off. You will find the males from these matings able to produce good layers. Keep this practice up with other families, and in two seasons you will own a high-averaging flock.

If the hen house is damp, it is safe to say fewer eggs will be laid. A chicken can stand any amount of cold, but very little moisture, when housed.

High-priced markets are sought for—few seek.

Lancaster county, Pennsylvania, has an egg collecting and selling association. Its deliveries are made to New York by truck. Highest market prices are obtained because grading is carefully looked after. Any community can form an association and derive profit from it.

California is full of co-operative associations—fruit, agricultural products, truck, nuts and poultry products. So is Texas and the Eastern Shore of Maryland and Virginia.

Early cockerels are going to bring good prices this spring. Stewing chickens are worth something just now.

With the big hatcheries doubling capacity there will still be a shortage in day-old chicks.

When the incubator comes into more general use, eggs will be more plentiful in the season of high prices, and farmers will add to their incomes.

The corn-fed fowl that survives this one-grain diet is usually almost too fat to eat. It goes without saying much about it that it will lay few eggs.

A correspondent wants to buy some guaranteed hens and cockerels, that a short cut to successful egg farming may be made. It required twenty-two years for England's premier poultryman to travel the shortest cut he could find. It is hardly probable that man would sell his short-cutters.

The law of self-preservation in the poultry business is make your own heavy layers and keep them.

Holland, the snug little country of dikes, neutrality and enterprise, is adding to her war-time thrift by sending dairy products to this country, taking, incidentally, advantage of exchange rates.

The pullets that lay at four and a half months usually molt all winter—*practically profitless producers.*

Push ahead this spring. Put pep into your flock by a loan of some of your own. If you haven't any, make up your mind your flock won't pick it out of the gentle breezes, nor will you increase your earning power.

Farm Boarders

J. D. CARSON

Not very many of the southern farmers take boarders, that is, human boarders, but the farmers throughout this section who do not have boarders in the shape of stumps and boulders in their fields are the exception rather than the rule.

It has been my experience that the average stump and boulder costs the farmer about twenty-five cents per year to maintain. In other words, the space that the stump or stone occupies would raise crops worth twenty-five cents if the space were available for planting. Not only that, but the farmer has the trouble of working around them, and frequently breaks his machinery and harness by running into them. This, added to the loss in crops, makes the average cost to the farmer of maintaining these profitless boarders even more than twenty-five cents apiece yearly.

Like most of the farmers in this section, it had never occurred to me that the stumps and boulders in my fields could be ousted without much trouble and expense. I had heard of using dynamite, but was afraid of it. The only other way that occurred to me was grubbing out the stumps and sledging the boulders, both of which were harder work than I was able to stand.

Recently a chap passed through this region in an automobile, carrying with him some dynamite and a few simple blasting tools. He told me he was demonstrating for a powder company, and asked me if I had any stumps or boulders that I wanted to dispose of. I told him I had plenty of them. My land had a red clay subsoil, which he told me offers dynamite very good resistance and therefore that very little dynamite would be required to blast stumps and stones out of it. In fact, he showed me how mine could be disposed of with from a quarter of a pound to a pound of dynamite to the stump or boulder.

I watched him blast three or four stumps, after which he gave me enough of his dynamite to try some blasting myself while he was present. I wasn't afraid to handle it after seeing him work with it, and realize now that no one need have any fear of using this explosive if they will merely exercise the reasonable precautions that should be used in connection with any dangerous implement.

After the expert left I bought some explosives and went ahead with the clearing myself, and, in spite of my limited experience, had perfect success. As a result of this clearing we are now able to use modern farm machinery on the place. We can raise larger crops because of having a larger area to farm, and can get over the ground quicker, with less help both in planting, cultivating and harvesting.

Since trying this experiment I have acquired a different view of land clearing. Before, I thought I couldn't afford to clear my land. I can see now that a farmer can't afford not to. He really sacrifices in crops, time and in a good many other ways more by leaving the stimps and boulders on his fields than it would cost him to take them out.

Virginia.

For Winter Layers

Early pullets make winter layers; late ones will not begin laying until spring, according to P. T. Ziegler, poultry instructor at the Pennsylvania State College. Chicks which are hatched in March, April or early May will be mature enough, if properly fed and cared for, to commence laying in October or November, and will continue during the winter. However, if they are hatched too early and begin to lay in July or August, they will stop when fall comes, moult, and take a rest during the winter. Eggs are usually scarce and high during the winter. In order to take advantage of this fact it is necessary to plan now for a flock which will be prepared to produce the desired commodity when it is in greatest demand.

A favorite plan of farmers in eastern Ohio is to mix Alsike with red clover, particularly where some legume is needed for soil improvement purposes. Where red clover is reliable it is preferable to Alsike, because the Alsike produces seed in the first or hay crop, and then dies, whereas the red clover occupies the land throughout the season.

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The Soy Bean—Its Promise as a Farm Crop

A. E. GRANTHAM

Of the many agricultural plants introduced into the United States within the past thirty years, or since the agricultural experiment stations were founded, comparatively few have found a permanent place in general farm practice. This has been due to many causes, among which may be mentioned the lack, on the part of the plants, of adaptability to soil and climatic conditions, as well as their failure to surpass in yield or quality crops already established. It is true that certain species or strains of plants have been found that have proven desirable for certain localities, but it is a rare plant indeed that has become a companion to our commonly grown grain and forage crops. The soy bean, however, seems well adapted to the environmental conditions of this country, and meets the requirements of practical farming to a marked degree.

As a field crop the soy bean is new to the corn belt, although the plant has been grown in a limited way as a garden novelty for many years. Systematic efforts towards bringing the crop into general culture did not begin until the agricultural experiment stations were established. About 1890, Professor Brooks, of the Massachusetts Agricultural College, on a trip to Europe, secured the seed of a few varieties of the soy bean, which he planted and carefully studied. This marked the beginning of investigative work by the experiment stations in many states. Through this means the soy beans have been tested and the farmer made acquainted with the merits of the crop. Nevertheless, it is a difficult matter to introduce a new crop, and while many progressive farmers are now growing the soy bean, yet the plant is practically unknown on most farms. It must be said, however, that soy-bean culture is entirely past the experimental stage and that the interest in the crop is developing rapidly. The past five years have shown a remarkable increase in the area planted.

The soy bean originally came from the Far East. In Manchuria, China and Japan it is grown extensively, forming a large part of the diet of those people. Of recent years thousands of tons of beans have been shipped from these regions, especially Manchuria, to England, where the beans are pressed for oil, and the oil cake fed to live stock.

The soy bean is an annual legume, eighteen inches to four feet in height, and maturing in from 70 to 140 days, depending on variety. Like other members of the legume family, it is able to utilize the nitrogen of the air through the agency of the bacteria which live on the roots of the plant. This gives the crop a distinct value for soil improvement purposes. The wide range of varieties as to maturity serves to good advantage when using the soy bean for improving soil conditions, as the shorter intervals of the season, after regular crops, may be utilized by sowing the beans as a catch crop. The later maturing and larger varieties may be used as one of the principal crops of a rotation, occupying as they do about the same season and period of growth as corn. Not only does the growing of the soy bean serve to increase the nitrogen supply of the soil, but it also has a direct effect on the texture, leaving it loose and friable. This is a condition which is very apparent in clay or clay loam soils. Following soy beans, a little harrowing or disking will put the land in good condition for seeding. Undoubtedly the soy bean has as great a fertilizing value as the cow pea, although the present price of seed will prevent the extensive use of the crop for soil improvement alone.

The most practical way of growing soy beans is to place them in the regular rotation of crops, following the beans with wheat or some fall grain. The grain crop will make use of the increased fertility, due to growing the beans, before leaching occurs.

The uses of the soy bean are many. It may be grown for hay, the quality of which, when properly made, equals or surpasses alfalfa. In fact, some dairymen claim better results from soy bean hay. Its chief value lies in its high content of digestible protein. If the beans are cut when the pods are well developed, the hay will contain a considerable percentage of fat, which gives it a nutritive ratio very similar to that of alfalfa hay. Soy beans will produce two to three tons of hay per acre in a period of about one hundred days, and under certain conditions may be used to advantage for pasture in the late summer or early autumn, when pastures are likely to become short. The soy beans blend well with the corn crop for fattening hogs in the fall, since the two mature so nearly the same time. The two crops may be grown together and then pastured, as is often done with hogs. The beans are readily eaten by hogs, and make a considerable part of their growth by supplementing the corn ration. The Alabama station found when corn was fed to hogs, 100 pounds of pork cost $7.63 per hundred; when fed a two-thirds ration of corn and pastured on soy beans, the cost was $2.74 per hundred pounds of pork.

Soy beans may be used as silage in connection with corn, the two being mixed in filling the silo. Experiments show that they have great feeding value when compared with corn. The Tennessee station found that an acre of corn furnished four steers with feed for 54 days, producing a gain of 129 pounds, while an acre of soy beans fed four steers for 80 days and produced a gain of 406 pounds.

A comparison of soy beans with linseed meal and tankage as a supplement to corn for feeding hogs was made by the Indiana Experiment Station. The results show that the beans produced practically as good gains as the purchased feeding stuffs. In this case the beans were ground together with the shelled corn. The chemical analyses of soy beans bear out the above conclusions. Their protein content (threshed) is nearly 35 per cent., which is higher than linseed meal and a little less than cottonseed meal. The beneficial effects due to feeding oil cake may be secured through the use of the soy beans, which contain from 15 to 20 per cent. of oil, thus giving the desired laxative properties to the feed. It is no longer a theory that considerable protein must be fed in connection with a carbonaceous ration like corn in order to produce the best results in milk or meat production. That it is a fact is shown by the large quantities of commercial feeding stuffs now upon the market. Today the wholesale quotation of linseed meal is about $85 per ton, cottonseed meal $80 per ton, while corn is selling from $50 to $60 per ton.

The future of the soy bean as a permanent crop in our agriculture does not rest upon its direct commercial value, but rather upon the use of the plant by the farmer himself to take the place of much of the concentrated feeding stuff now purchased. With the advancement in agricultural information has come a demand for plants that will aid in restoring worn-out soils and that will supply a greater variety of feed and forage. Since an acre of soy beans will produce nearly a ton of beans, to say nothing of the vines, some of the possibilities of the plant as a feeding stuff become apparent. This same acre of beans, vines and all, contains as much nitrogen as if found in 800 pounds of nitrate of soda, although not so readily available as the latter. The feeding of such a crop is bound to increase the fertility of the soil if the manure is properly handled. Greater efficiency in live stock management and in soil improvement will come rapidly as the soy bean is more generally grown.

The practicability of growing soy beans as a source of protein is shown by comparing the average yields per acre of cotton seed and flaxseed, our great sources of commercial protein, with soy beans. An acre of cotton will produce about 1000 pounds of seed, an acre of flax about 700 pounds, while an acre of soy beans will yield 1500 to 1800 pounds. Flax and cotton do not improve the soil on which they grow, and the territory in which they may be profitably cultivated is limited, while the soy bean, which does benefit the soil, may be matured wherever corn ripens. Further, the feeding products of cotton and flax must be prepared by special processes before using, whereas the soy bean can be used directly on the farm. The purchased concentrated feeding stuffs are by-products of other industries, and must be paid for accordingly. With the soy bean the farmer is now balancing his own feeding rations, and in cutting down his feed bill is adding materially to his profits. It has often been said that the feeder could well afford to purchase high-grade feedstuffs for the value they gave the manure. If this is correct the use of the soy bean produced on the farm will be doubly profitable, as it improves the soil by its growth, and returns as manure to fertilize the land.

In the future the farmer, by the proper management of the crop, will be enabled to grow his own feeds and balance his stock rations as he likes. The soy bean is likely to become a valuable adjunct to red clover, which has been so greatly depended on in the past. Not that soy beans can entirely take the place of red clover, but when clover is found to fail, the beans may be grown instead, so that the rotation may not be seriously interrupted. They will follow corn nicely in the rotation, and take the place of oats. Our so-called clover-sick soils would undoubtedly be improved by introducing into the rotation a crop like soy beans.

Aside from its use as a feed and for soil improvement, the soy bean has a direct market value. The seed, which is produced at the rate of 20 to 35 bushels per acre, commands a price of about $5 per bushel for the vest varieties. As the cost of production is very little more than for ordinary grain crops, it will be seen that soy bean culture will pay. The demand for good seed at present far exceeds the supply, and the price has advanced steadily during the past five years. The attention of manufacturers of paint and soap is now being attracted to the soy bean as a source of oil. Soy bean oil has drying properties, and may be used to partially take the place of linseed oil in mixing paint. As a vegetable oil it meets the requirements of the soap maker as well. England and other European countries are now using large quantities for the production of oil and stock feed.

The soy bean is not difficult to grow. It is comparatively free from plant diseases and injurious insect pests. The soil requirements of the crop as regards preparation, fertilization and cultivation are not more exacting than those for corn. In fact, the land is prepared as for corn, and the planting made ten days or two weeks after the usual corn-planting season. No advantage is secured by planting very early, as the beans require a warm soil for rapid growth. It is fortunate that the planting period of the two crops do not coincide, on account of labor.

The method of planting soy beans will depend on the purpose for which they are grown. The general practice in growing for seed production is to drill in rows 24 to 36 inches apart and cultivate. This requires one-third to one-half of a bushel of seed per acre. For hay the beans are drilled exactly like wheat, using about six pecks of seed per acre. Grown in this manner the plants soon cover the ground so that cultivation is not necessary, and the plants are not so coarse as when drilled in rows, thus making a finer quality of hay. The yield of seed per plant is considerably larger when grown in rows and cultivated. However, the difference in yield of seed from drilling in rows and cultivating and drilling solid is not great. The saving of seed by the one method of sowing is offset by the cultivation required by the other.

Like most legumes, soy beans acquire considerable phosphoric acid and potash, and while the plant is able to supply the most of this from the soil, yet a moderate application of a mixture of 500 pounds of acid phosphate and 100 pounds of muriate of potash, or a 0-12-5 formula, will be desirable on soils of average fertility. Ordinary farm machinery is generally used in planting, cultivating and harvesting the crop. The grain separator will crack some of the beans, but machines are now on the market that thresh them without splitting.

The beans are cut for hay at any stage from the time the pods begin to set until the lower leaves begin to turn yellow. If cut at the earlier stage the shrinkage due to curing is very considerable, although the percentage of protein of the hay will be higher than that of hay cut at later stages. The later cut beans have a less percentage of protein, but a much greater weight, and probably contain as much or more protein than the early cut hay. Also, the later and more nearly matured beans are cured with less difficulty, and on account of the developed seed, form a better balanced ration. The fact that the beans may be cut during a considerable period gives great flexibility in managing the crop.

The beans may be harvested for seed while the vines still retain their leaves, as they have then matured sufficiently to germinate. Thus a seed crop and considerable forage are obtained if the beans are cut when the beans of the plant begin to turn yellow. Where only small areas are grown the beans are allowed to shed their leaves, and the plants are pulled, tied in bundles, and later flailed out. The upright habit of growth greatly facilitates the harvesting of the crop either by machinery or by hand. Unlike the cow pea, the soy bean matures all of its pods about the same time. It is quite common to find cow peas with ripe pods and blossoms on the same vine, which makes it difficult to cure the hay properly or to save the seed, a condition which does not obtain with the soy bean.

There are a large number of varieties of soy beans. These present wide variations in the habit of growth, character of vine, size, shape and color of the beans. The possibilities for selection for specific purposes are very great. As the peculiar merits of these varieties become better known, more attention will be paid to their special development. For example, certain varieties with fine-textured vines are especially adapted for hay making, while others show a more pronounced seed-bearing habit.

To what extent the soy bean may be improved by selection and breeding is unknown, as little or no work has been done along this line. Judging from the wide range of characters that are represented by the varieties, the field of endeavor is full of promise.

Soy beans are now being grown as far north as Wisconsin and as far west as Iowa. There are increasing demands for seed to be used for growing along with corn for silage, especially in the northern states. In the corn belt, planting the beans with corn and then hogging them down is becoming quite a common practice.

The use of Alsike clover as a substitute for the common red clover is gaining headway in Ohio, according to the Ohio Experiment Station. This is due to the fact that the Alsike clover produces favorable yields in soils where lime is deficient and under-drainage is lacking.

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Neighbors—Good and Bad

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TOPIC No. 1287, MARCH 15.—Have you found it pays to have a side line specialty, such as water cress, cottage cheese, eggs for hatching, or any of a hundred others? Just what is yours, how do you handle it, and what are the returns, both in pleasure and profit?

TOPIC No. 1288, APRIL 1.—What is the best way to start a strawberry bed so as to have plenty for home use and some to sell? What variety is best, how is the ground prepared and fertilized, how far apart are the plants set, and what care do they need the first year?

O. J. H., Johnstown, N. Y.—The advice in the Scriptutres to "Study to be quiet and mind your own business" is something all need to learn before they can hope to have pleasant relations with their neighbors. I think that the largest portion of all our troubles with the neighbors is the result of our own conduct. I could be in a quarrel with all my neighbors very easily, as those about me come and tell a tale about another neighbor or give an opinion of them. If I should repeat some of the statements made, to one of the neighbors, there would likely be a quarrel on, and myself included. By keeping this "talk" to myself I get along well with all, although they may be in disagreement with one another. The gossiping and busybodying does not come my way often, because I do not pass it on or give them a new supply to carry off with them. Each tale-bearer garnishes and adds to the gossip in accordance with their opinions, and sometimes directed by a hidden motive.

If you would rejoice to see less of strife in your neighborhood, you should remember the words of the wise man: "Where no wood is, tiere the fire goeth out; so where there is no tale-bearer, the strife ceaseth." Prov. 26: 20.

Borrowing causes trouble between neighbors if the lender is looked upon by the borrower as a supply house. Lending and borrowing is beneficial to both parties if they are careful of each other's interests. The neighbors here help one another thresh and fill the silo. Some ill feelings have been aroused by the practice some neighbors follow of asking others to help them with their hard and dirty work and then seek to pay cash in the place of helping in return. Misunderstandings arise, and the neighbor who thinks he is injured, as a rule, will go about the neighborhood spreading his grievances. Such a course will make matters worse, and sometimes leads to a lawsuit. Few misunderstandings but what can be cleared up easily by following the scriptural admonition to tell your neighbor his fault, to him alone, and you will find him willing to make amends. Straightforward, open dealing has changed neighbors who were angry, bordering on a state of rage, into the best of friends.

A few neighbors own machinery on shares. This arrangement usually works to advantage, although some are dissatisfied.

When the Lord pours out His spirit upon all flesh, and all know Him, from the least unto the greatest, and all are striving to love their neighbor as themselves, a condition our minds cannot now grasp will be on the earth. Let us commence at once to raise the standard of our neighborhood by seeking first to be a "good neighbor ourselves."

Mrs. G. S. D., Denton, Md.—We have lived in six different neighborhoods in three states during the past twenty-five years, always among farmers, and all have been good neighborhoods. Not every neighbor has been desirable, but almost every one had some good traits, and most were fine.

We never quarrel with the neighbors, either treating them so well they will be kind to us, or letting them alone if they seem to shun us. One secret of keeping peace is to avoid too great intimacy. Do not tell them your business, nor pry into theirs. Never allow anyone to come into your house and tell malicious gossip or slander about others. Just say, "I do not believe it," or "It does not seem fair to tell such things behind people's backs; it would be better to ask them if it were true," or some such thing. This will soon discourage such talk. It is apt to provoke the tale-bearer, but I care little for that. Then, our children should be taught to keep family affairs to themselves.

Our neighbor killed a beef, and wanted help in the house canning it. We also wanted to can beef, so bought one quarter of him, and worked together in the canning, making it easier for both. When this neighbor was ready to go to get Delaware trout to can, he got our supply for us, and we canned together again.

Another neighbor who has no auto hires us for a small sum to take his eggs to market when we carry ours every week, thus saving him a twelve-mile ride with a team. We are always willing to take these neighbors to an evening entertainment when our car is not full.

Let us teach our children by precept and example to render any little kindness to anyone in need, refusing to take pay even if offered. Let us try to make our neighborhood just as good to live in as we can, and I feel sure it will be largely what we make it.

Mrs. R. F. McK., Mercer, Pa.—I think the secret of having good neighbors is embodied in the following statement: If you are a good neighbor yourself, you will have good neighbors.

The truth of the above statement has been well proven in the experience of a friend of mine. He has lived in the same neighborhood for some twenty years, and in this time, with the exception of one petty disagreement, has lived in peace with all his neighbors, while the majority of these same neighbors quarreled among themselves and "fell out" with one another.

His success I attribute to the following reasons:

First, he attended strictly to his own business—the first requisite of a good neighbor.

Second, he was fair and just in all his dealings with his neighbors.

Third, he was friendly. Though he had little time for visiting, he always had a cheery greeting for a neighbor when he met him in the road, and, if time permitted, a friendly inquiry for his health, condition of crops, etc.

Last, he was always ready to help when a neighbor was in need, and always ready to loan anything he owned.

There may be some neighbors who are hard to get along with, but I think the fault lies largely with us.

J. R. T., Edinboro, Pa.—This is a fine subject. It sets us thinking about our neighbors, and perhaps about ourselves—how our neighbors use us, and how we treat them. Yes, if we would do more thinking and less talking along these lines, I believe that it would be far better.

But, now, to be honest, what do I think of my neighbors? Why they are all good, of course. They are all honest, and that is one of the best things anyone can say about any community. Why, we never think of locking a door, and we can leave a chain or an axe or a saw outdoors any place and we always find it just where we left it.

They are all neighborly, too. There is not a man in this community who would not loan a neighbor any tool or implement on his farm if he was asked for it. They work in harmony on the help-one-another plan. When the question of taking the milk up to the corners, where the milk route starts, came up, we just agreed for each one to take it his share of the time, and not all go each morning.

These cold, stormy days, when the snow keeps drifting more and more, my neighbors and myself try to keep the road broke ahead of the mailman. He seems to appreciate this act of kindness very much.

When butchering time comes along and I get ready to dress a hog or two, I just call my neighbor on the phone, and he is down to my place shortly, and the job is soon over. When he is ready I go back and help him. We never keep track of the time.

These are the little neighborly acts that make life worth living and make our path easier to travel. The time is past when man can live individually; we must live collectively.

J. U., Lafargeville, N. Y.—Our neighbors are all of the good kind. There are really but few of the other kind. They are mostly the ones who let their stock, poultry and children trespass on one. The ones whom you would at first thought class as undesirable neighbors are really often the best ones, for when you need help they will give it without waiting as some of the others may.

We may think that the borrowing neighbor is not a good one, and if you have one of this kind who does not like to lend as well as borrow, you are right, but these are easily cured. Go and borrow something, even if you have to go after something that he borrowed and forgot to return, but be sure to bring something of his home with you, whether you need it at once or not. If you are not quite ready to use it you can keep it till ready. If the articles borrowed are small, like a cup of salt or a spoonful of soda, why go them one better and borrow a cup of sugar, and a little tea or coffee, and explain that it's a poor rule that will not work both ways.

As to neighborly arrangements, perhaps the most valuable ones are those which are merely understood. For instance, we have a telephone, the last one on our line, and the neighbors on one side of us know that they may use it at any time. Then we have a never-failing well, and water can always be had for threshing-engines, washing clothes or watering horses. In return we get what we have need of—auto rides to town, a load of coal drawn, or most anything we ask for.

Mrs. H. L. P., Needmore, Pa.—Our bad neighbor had a bad reputation when we moved beside him. The first year we both raised turkeys. Our turkeys did not bother him, but his flock of about eighty lived on us. Of course, they did not do much damage, only ate plenty of corn when we husked it. But we made no complaint, for we knew he could not keep them off very well. But the next year I raised some ducks. Thirteen is all I had to start on. He had ducks, and mine took to going on his place. Now the tables were turned, he shut the ducks up for days at a time and kept the eggs, until I finally had to sell them all, while at the same time another flock of about eigaty turkeys were feeding on us.

I have moved, and am glad I can say that all my neighbors are good. But one is especially a good neighbor. If any of us are sick, the weather is never too bad nor this neighbor is never too busy to come to see how we are. And when we butcher, or make apple butter, or thresh, she always comes over to help, and I always try to do the same. I am sure no one has any better neighbors than I have now.

Mrs. P. C. H., Cornplanter, Pa.—I think we can all appreciate the titles as applied to those we have known.

The bad neighbor has many habits that are annoying to the other neighbors. One of the greatest is the borrowing habit, asking the use of all or any piece of machinery and for anything about the farm, from baking powder to pocketbook and team. This habit thrives on the kindness of the other neighbors, and, I think, can best be kept down by often being out of the requested article or wanting to use that particular piece of machinery that day oneself. I used to know a lady who said it was expensive to borrow because when she returned the borrowed article she felt she must put in just a little more than was received to show appreciation for the kindness, but what of the people who "borrow," as they call it, with never an intention of paying back? This class needs a check right at the start.

The good neighbor is the one who is ready to do you a favor when needed, and is willing to let you help them out in return, so that in "turn and turn about" you both feel that you have done your part. Little exchanges of meats at butchering time, exchanges of fruits and vegetables, help to give variety to the menu and are greatly appreciated by the housewife.

For the neighbor who tries to do what they can for themselves, always extend the helping hand, either by a day's assistance, the loan of some farm tool, the loan of the favorite farm paper or a new book—anything that will brighten and help along, for on many farm homes many of the little things must be gone without. Look into your own day, and see that each one can say: "He is a good neighbor."

Mrs. C. H., Howard, N. Y.—We have some good neighbors, and some who do not seem so good because we do not see things as they see them. "Love thy neighbor as thine self" may be a good doctrine, but how are we to do it when they let their hogs run and tip over our chicken coops and kill the young chicks; borrow things and never bring them back; are so slow about fixing line fences, or allow their children to come to your place and act as if they were at home, going from one room to another and not even stopping at closed doors?

Some of our neighbors are fine. We exchange garden truck; draw each other's milk, change each week; once in a while do the other fellow's chores so he can go away, and are friendly. I think it is fine, but some carry it too far. We think the most of our neighbors who are independent; the ones who very seldom ask a favor; the fellow who smiles and has a good-morning-sunshiny look when other things are looking rather down in the mouth; the fellow who has something to say that takes you out of yourself and makes you think this is a pretty good old world; and you praise God for life and a neighbor like that.

Timber Yield in New York

New York state, with a potential forest area of more than 12,000,000 acres, is now cutting timber at the rate of only a little more than 750,000,000 board feet, or about 60 board feet to the acre each year—about the equivalent of a white pine tree eight or nine inches in diameter.

This lack of productivity is even more surprising, according to the Cornell foresters, when one realizes that under the present unsystematic conditions the forests of the state are not laying on wood, or growing, much more than 250,000,000 board feet a year, or about 20 board feet an acre.

Yet New York state industries are consuming timber at the rate of over 1,750,000,000 board feet every year. More than two-thirds of the money paid for this goes to other states. Of the forest wealth of the state, the farm wood lots represent more than 4,000,000 acres, but do not bring the return they should. If all of these wood lots could be placed under careful forest management for a period of twenty years, the college of agriculture at Ithaca says that by the end of that time they could be producing nearly 500 board feet an acre a year. This would be more than enough to take care of the wood-using industries of the state under present conditions. It would probably result, further, in bringing new industries.

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HEBE was created to reach this additional market—*to serve as an auxiliary to the daily milk supply for specific uses in the home.* Hebe is labeled with the utmost frankness as to its contents and uses. It is advertised as it is labeled—honestly and frankly—"A Compound of Evaporated Skimmed Milk and Vegetable Fat," for cooking and baking. By the scientific emulsifying of refined cocoanut fat with the skimmed milk, Hebe makes it possible to market skimmed milk as a human food, and thus opens to the dairyman another and more profitable outlet for his by-product, without interfering with the markets already established for dairy products. In the production of every 100 pounds of Hebe 210 pounds of skimmed milk are used, and 7.8 pounds of cocoanut fat. Thus a small amount of vegetable fat serves as the vehicle for bringing a large amount of skimmed milk to market as human food.

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

MARCH 15.—What vegetable in your garden, aside from potatoes or tomatoes, do you find gives you the largest amount of food for your home table? Tell us the essential facts about growing it, and at least one of the out-of-the-ordinary ways you prepare it.

APRIL 1.—Spring housecleaning is about the order of the day, and we are wondering how we can improve the appearance of some of the rooms. Maybe you can tell us of some interesting interior decoration schemes which you have successfully executed.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Training Children in the Home

Mrs. E. S., Harveysburg, Ohio.—When our little tot came to the "running off" period, there were repeated offenses, until one day I went for him, led him quietly home without a word of reproof, took him in my arms, sat down by "our window," saying: "We will have to be very still until you can be good." He took a long time, crying, struggling at first, but finally the little arms went about my neck, with the sweet words: "I'll be good, mamma." There were caresses. He went happily to play. I was behind with my housework for the day, but the boy had had his lesson. He did not again run away.

When the age of many questions came, I answered them truthfully, taking care that he received what he asked for. Of some things I said: "We do not talk of these to everyone, just you and me." This was the beginning of confidences that have continued to this day.

When he was disrespectful to his elders or naughty and rude to playmates, we had a season of reasoning together until he willingly offered an apology and tried to make amends.

The child's love of "story" was fostered first by telling, then reading real, live ones of nature, animals, birds, flowers and plants, leading soon to standard literature, which gave a good foundation for English work at school.

Beginning at seven years of age, he was given piano lessons for eight years. Though quite expensive, it has been worth while, not alone in the home, but it has given him the advantage of belonging to music clubs, etc., while in college and camp.

He earned his spending money, and kept a book account from the first. We never paid him for work in the home, but let him tend a "patch."

Our home was never without a family altar. The child was *taken* to church and Sunday school, grew up to love it, and still loves it. Sunday afternoon was spent with his father reading to him Bible stories, poems, nature stories, something pleasing and happy, until tired, when they went for a walk over the fields to the woods, usually taking several other children with them. They returned tired but happy, with interesting things to tell me. The boy was always anxious for Sunday to come.

Mrs. M. F. S., Georgetown, Del.—The training of children in the home largely falls on the mother, especially in early childhood. She in a measure is responsible, to a greater extent than the father, for its health and morals. I am now a grandmother several times over, in my seventy-eighth year, and my experience in child training may help some discouraged mother.

As soon as my little boy could understand, I began telling him Bible stories, and in four or five years he was acquainted with nearly all the prominent Bible characters. I found that firmness was the best method in his training, as when told to do anything he must immediately do it, and when told not to do a thing he must obey. Never tell them they cannot do a thing, then, because they cry and tease, tell them, "Oh, yes, only go and cease teasing me." Do not hastily decide. However, if the decision is made, let it remain unless circumstances require a change, and tell them the reason.

Give the little people all the pleasure possible. Teach them to be orderly by having a place for their playthings and clothing, a place for their little hats, rubbers and wraps, and teaching them to put them in their proper place when not in use. This will insure self-reliance to a great extent and save the mother many steps.

It is a wise plan to teach them to work, and try to get them interested in how to do things. Encourage them in their trying, and if failing to do it just right, having them try again. Encourage them in reading when old enough, giving them something interesting, and have them often read aloud. In early childhood teach them to be polite and courteous, respectful to all elderly people. Never use rough language in their presence, and teach them how rough language is repulsive to cultured people. A well-behaved, polite child is an ornament to any household. Encourage them to be helpful to others. Again I say firmness is one of the most helpful methods in child training. Let your yes be yes, and your no, no, and no teasing after the decision is made.

Mrs. A. B., West Valley, N. Y.—"Parents, provoke not your children to wrath!" is as much a command as, "Children, obey your parents." If the real rights of children were more respected, I believe their dispositions would be happier and they would more readily yield obedience, which is the first fruit of love. Suppose grown people were engaged in a game, say checkers, and just at the critical part were ordered to stop instantly. A child may not be allowed to always say "Wait a minute" when asked to do something, but parents need not always command when they are just in the midst of an exciting play or game. If it *is* strictly necessary that they should stop at once, apologize as you would to a grown person, *not sneer* and say you guess their play can wait.

Don't make a child feel that everything you do for them was time needed for something else, nor that their indebtedness to you is great. You brought them into the world, and *you once them* love and care and bright, happy homes as far as you are able to provide them. A child will early learn to love and help keep a home bright if treated as an individual.

Teach your children manners by being mannerly yourself. Make them intelligent by answering their questions correctly, or when one is too tired or busy, tell them so firmly and kindly. Teach them by stories and pictures, and help them to notice all the little things in pictures. Be kind, patient and, above all, sweet and cheerful; try to see the humorous side of things. Mothers ought not to overwork so that they lose all strength for anything but work.

Mrs. L. E. D., Richmond, Va.—The child is a very imitative little person, and my experience with two children of my own, as well as observation of many others, leads me to believe that the best advice that can be offered parents is to "watch their own steps." Environment is perhaps the most important consideration in the upbringing of children, and it is only the part of wisdom to make environment what it really should be. Children like to do "like mother" or "like daddy," hence if the father and mother will always keep that thought in mind and make their manners and actions worthwhile examples for the impressionistic mind of youth, they will have learned the greatest lesson in child training. If children do not live in an environment permeated by that which you are seeking to impress upon them, it is a mighty difficult proposition to train them successfully. Of course, there are individual problems that arise and which must be solved in a manner best suited to the occasion, but the problems of child training will be greatly minimized and simplified if the parents will only make their own manners and actions the right kind of examples for their offspring.

Mrs. J. F. W., Shelbyville, Ill.—Children are our best crop, but, alas, how few seem really to think so. This community has had more deaths than births for several years. Therefore our little bunch of six seems a large family. A census taker found a family of ten near here—rare indeed!

We believe in a perfect educational system. Our children do well as a rule at school. We all sleep out of doors all the time. We have always given our children much Bible training. The older ones have read the Bible story book through at least once. We are careful of their associations; almost never go to shows, only those specially chosen by school or church people. Most of them say little about going to ordinary shows. We have never permitted dancing, either. This seems pretty fogy, perhaps, but we have several neighbors who concur mainly in these beliefs.

We like to give the children outings and vacation visits as much as possible. Our 10-year-old baby boy went to visit his aunt in Missouri, 300 miles away, last April, and remained until Christmas. Of course, he learned many valuable lessons there and traveling. All but the baby girl, 6 years old, went somewhere last vacation from 10 to 50 miles distant, and the baby went with me to Missouri to get brother. Then, we hike, swim, gather flowers, study birds, and work at various things with our lads and lassies. We don't pretend to know anything, however, and watch everywhere for any possible help, always willing to learn.

Mrs. J. E. A., Clymer, N. Y.—Training should most assuredly start in the home. I can speak from experience as a teacher and mother when I say that the child who is allowed to follow his own inclinations until he is taken in hand by teachers in the public school has many obstacles to overcome that his more fortunate classmate has already conquered in the home. Short acquaintance with the child soon reveals to the teacher the lessons he has had instilled from the mental, moral and physical side in his home life. I can frankly say it's some proposition for a teacher to make up for this negligence on the part of the parent.

Example is the keynote to all good training. Children are born imitators, therefore to secure desired ends we have but to act the part, and soon the child will be following in our footsteps. I recall how we labored unceasingly correcting our babe for not replying with a "Yes, please," or "No, thank you," if she desired something at the table. One day the thought came to me that we couldn't expect the child to use good manners if we didn't at all times use good etiquette ourselves. By thinking carefully of our utterances and by example the child has taken quickly to the right way, and our ceaseless correcting has ended.

It's true it takes time on the part of the busy parent to be ever on guard, but I'm sure parents are repaid a thousand fold in the presence of company when the child responds unconsciously in a polite manner. Good training isn't a Sunday garb, but its texture is made more beautiful by everyday usage.

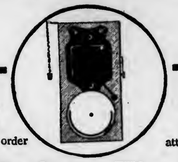
If we feel that we are lacking as parents from a mental, moral or physical standpoint, I say: Get busy! Seek help. There are many avenues that lead to the "house of knowledge." Be a traveler yourself, and your children will naturally become pilgrims at ease and at home in any land.

E. G., Buchanan, Va.—I am more thankful each day that my parents taught me from earliest childhood to trust God as my Father and Guide, and Jesus as a very present Friend and Helper. How many frights and nervous fears this faith saves little ones, and what a sure foundation for true character and usefulness! Then, can you begin too early to teach reverence for God, for the aged and for all good and for those in authority? It is said that this is the "age of irreverence." And what an age of unrest it is!

A proper regard for others' rights, and the true politeness (to do the kindest thing in the kindest way) that this respect for personal rights fosters, will prove a great factor in smoothing life's road. Ease of manner is most easily learned through play. Two ministers I know, who have important city churches, grew up in a very humble farm home, yet doubtless their usefulness and advancement have been largely due to their politeness and ease of manner. In boyhood their sense of humor prompted them to "play gentlemen," and they practiced lifting the hat, setting out chairs, opening doors, etc., for others, until such little courtesies, which mean so much in our daily intercourse, became second nature to them.

Criticism—that besetment that probably causes more anguish and regrets than any other one fault—is easily learned by hearing it, so parents should avoid all discussions, in the presence of children, of anything in each other or in teachers of which they do not approve, lest they lose the respect of and their influence over these very sharp youngsters, who are natural born critics and are all too prone to form the habit.

A knowledge of food values is a safeguard against disease.



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CHAPTER IX

UPHEAVAL

"Forty-eight, forty-nine, fifty, fifty-one, fifty-two, fifty-three—for goodness' sake! — fifty-four, — fifty-five." Carol looked helplessly at her dusty hands, and mopped her face desperately with her forearm.

David, watching her from the bed in the adjoining room, gave way to silent laughter, and she resumed her solemn count.

"Forty-six, forty——"

"Fifty-six," he called. "Don't try any trickery on me."

"Fifty-six, fifty-seven, fifty-eight, fifty-nine, sixty." She sighed audibly. "Sixty-one, sixty-two, sixty-three, sixty-four—sixty-four perfectly fresh eggs," she announced, turning to the doorway and frowning at her husband, who still laughed. "Sixty-four perfectly fresh eggs, all laid yesterday."

"Now, I give you fair warning, my dear, I am no cold storage plant, and you can't make me absorb any sixty-four eggnogs daily just to even up the demand with the supply. I drank seven yesterday, but this is too much. You must seek another warehouse."

"You are very clever and facetious, Davie, really quite entertaining. But what am I to do with sixty-four fresh eggs?"

"And I may as well confess frankly that I consider a minister's wife distinctly out of her sphere when she tries to corner the fresh egg market, particularly at the present price of existence. It isn't scriptural. It isn't orthodox. I am surprised at you, Carol. It must be some more Methodism cropping out. I never knew a Presbyterian to do it."

"And as for milk——"

"There you go again—milk. Worse and worse. Yesterday I had milk toast, and milk custard, and fresh milk, and buttermilk. And here you come at me again first thing today. Milk!"

"Seven whole quarts have arrived this morning—bless their darling old hearts."

"The cows?"

"The parishioners," Carol explained patiently. "Ever since the doctor said fresh milk and eggs, we've been flooded with milk and——"

"Pelted with eggs. But you can't pelt any sixty-four eggs down me."

"David," she said reproachfully, "I must confess that you don't sound very sick. The doctor says, 'Take him West,' and I am taking you if I ever get rid of these eggs. But I do think it would be more appropriate to take you to a vaudeville show, where you might coin some of this extravagant humor. There's a market for it, you know."

"Here comes Mrs. Sater with a covered basket," announced David, glancing from the window. "I just wonder if the dear, kind woman is bringing me a few fresh eggs. You know the doctor advised me to eat fresh eggs, and——"

Carol clutched her curly head in despair. "Cock-a-doodle-doo," she crowed.

"You mean 'Cut-cut-cut-ca-duck-et,'" reproved David.

Mrs. Sater paused outside the manse door in blank astonishment. Dear, precious David so terribly ill, and poor little Carol getting ready to take him away to a strange and awful country, and the world full of sadness and weeping and gnashing of teeth, and yet—from the open windows of the manse came the clear ring of Carol's laughter, followed closely by David's deeper voice. What in the world was there to laugh at, since tuberculosis had rapped at the manse door?

They were young, of course, and they were still in love—that helped. And they had the deathless courage of the young and loving. But Mrs. Sater bet a dollar she wouldn't waste any time laughing if tuberculosis were stalking through her home.

"Come in," said Carol in answer to her second ring. "We saw you from the window, but I was laughing so I was ashamed to open the door. David's so silly, Mrs. Sater. Since he isn't obliged to strain his mental capacity by thinking up sermons, he has developed quite a funny streak. Oh, did you bring us some nice, fresh eggs? How dear of you. Yes, the doctor said he must eat lots of them."

"They were just laid yesterday," said Mrs. Sater complacently. "And I said to myself: 'Nice, fresh eggs like these are too good for anybody less than a preacher.' So I brought them. There's just half a dozen—he ought to eat that many in one day."

"Oh, yes, easily. He is very fond of eggnog."

David sputtered feebly among the pillows. "Oh, easily," he echoed helplessly.

"I knew a woman that ate eighteen eggs every day," said Mrs. Sater encouragingly. "She got well and weighed two hundred and thirty pounds, and then she had apoplexy and died."

David turned on Carol reproachfully. "There, you see! That's what comes of eating raw eggs." Then he added suspiciously: "Maybe you knew it before, and have been enticing me to raw eggs on purpose."

Both Carol and David seized this silly pretext to relieve their feelings, and laughed so heartily that good Mrs. Sater was quite concerned for them. She had heard it sometimes affected folks like that—a great nervous or mental shock. She looked at them very anxiously indeed.

"Are you selling your furniture pretty well?" she asked nervously.

"Oh, just fine. Mr. Barker at the drug store has promised to fumigate everything after we are gone, so we won't scatter any germs in our wake." Carol spoke hurriedly, her heart swelling with pity as she saw the sudden convulsive clutching of David's hands beneath the covers. "Mr. Daniels has a list of 'who bought what,' and will see that everything is delivered in good shape. Only, we take the money ourselves in advance. Now, look at this chair, Mrs. Sater—a lovely chair," she rattled, thinking wretchedly of that contraction of David's hands and the darkening of his eyes. "A splendid chair. It isn't sold yet. It cost us eight seventy-five one year ago, and we are selling it for the mere pittance of five dollars even—we make it even because we haven't any change. A most beautiful chair, an article to grace any home, a constant reminder of us, a chair in which great men have sat—Mr. Daniels, and Mr. Baldwin, and the horrible gas collector who has made life wretched for everyone in the Heights, and—all for five dollars, Mrs. Sater. Can you resist it?"

Carol's voice took on a new ring as she saw the shadow leave David's eyes and his lips curve into laughter again.

"Well, I swan, Mrs. Duke, if you don't beat all. Yes, I'll take that chair. It may not be worth five dollars, but you are."

Carol ostentatiously collected the five dollars, doubled it carefully into a tiny bit, and tied it in the corner of her handkerchief.

"My money, Mr. David Arnold Duke, and I shall buy candy and talcum with it."

Then she ran into the adjoining room to answer the telephone.

Mrs. Sater looked about her hesitatingly, and leaned forward.

"David," she said in a low voice, "Carol ought to go home to her father. It's dangerous for her to stay with you. Everybody says so. Make her go home until you are well. She may get it too if she goes along. They'll take good care of you at the Presbyterian hospital out there, you a minister and all."

The laughter, the light, left David's face at the first word.

"I know it," he said in a heavy voice. "I have told her to go home. But she won't even talk it over. She gets angry if I mention it. Everyone tells me it is dangerous—but Carol won't listen."

"Just until you get well, you know."

"I shall never get well unless she is with me. But I am trying to send her away. What can I do? I can't drive her off." His hands closed and then relaxed, lying helplessly on the covers.

When Carol returned she looked suspiciously from the stern white face on the pillow to the disturbed one of her caller.

"David is tired, Mrs. Sater," she said gently. "Let's go out in the other room and visit. I have made him laugh too much today, and he is weak. Come along, and maybe I can sell you some more furniture." Then to David, brightly: "It was Mrs. Adams, David. She wanted to know if we needed any nice, fresh eggs." She flashed a smile at him, and his lips answered, but his eyes were mute. Carol looked back at him from the doorway, questioning, but finally followed Mrs. Sater into the next room.

"Mrs. Sater, you will excuse me now, won't you?" she said. "But I have a feeling that David needs me. He looks so tired. You will come in again, and——"

"Certainly, my dear, David first by all means. Run right along. And if you need any more fresh eggs, just let me know."

"Yes, thank you, yes."

"Carol," whispered the kindly woman earnestly, "why don't you go home and stay with your father until David is better? They will take such good care of him at the hospital, and he will need you when he is well, and it isn't safe, Carol, it positively is not safe. Why won't you do as he tells you?"

Carol stood up, very straight and very tall. "Mrs. Sater," she said, "you know I am an old-fashioned Methodist. And I believe that God wanted David to have me in his illness, when he is idle. If He hadn't, the illness would have come before our marriage. But I think God foresaw it coming and thought maybe I could do David good when he was laid aside. I know I am a silly little goose, but David loves me, and is happy when I am with him, and enjoys me more than anything else in the world. I am going with him. I know God expects me to do my part."

And Mrs. Sater went away, after kissing Carol's cheek, which already was paling a little with anxiety.

Carol ran back to David and sat on the floor beside him, pulling his hand from beneath the cover and kissing the white, blue-veined hand. She crooned and gurgled over him as a mother over a little child, but did not speak until at last he turned to her and said abruptly:

"Carol, won't you go home until I get well? Please, dear for my sake?"

Carol kissed the thumb once more, and frowned at him. "You want to flirt with the nurses when you get out there, and are trying to get me out of the road. Everyone says nurses are dangerous."

"Carol, please?"

"Mrs. Sater has been taking to you. Oh, I knew it. She is a nice, kind Christian woman, and loves us both, but, David, why doesn't God teach some people to mind their own business? She is a good Christian, I know, dear, but I do believe there is still a little work of grace to be done in her."

David smiled a little, sadly.

"Carol, it would break my heart if you got this from me."

"I won't get it. They will teach us how to be careful and sanitary and take proper precautions and things like that. I am going to be very, very careful. Why, honey, I won't get it. But, David, I would rather get it than go away and leave you. I couldn't do that. I should never be happy again if I left you when you were needing me."

David turned his face to the wall. "Maybe, dear," he said very gently, "maybe it would be better if you did go home—better for me. I need perfect rest, you know, and we talk and laugh so much and have such good times together. I don't know, possibly I might get well faster—alone."

For a long moment Carol gazed at him in horror. "David," she gasped, "don't say that. Dear, I will go home if it makes you worse to have me. I will do anything. I only want to help you. But I will be very nice and quiet, like a mouse, and never say a word, and not laugh once, if you take me with you. David, do I make you feel sicker? Does my chatter weary you? I thought I was helping to amuse you."

"Carol, I can't lie like that even to send you away from me. Maybe I ought to, but I can't. Why, sweetheart, you are the only thing left in the world. You *are* the world to me now. Dear, I said it for your sake, not for mine, Carol, never for mine."

Slowly the smiles struggled through the anguish in her face, and she resumed her kissing of his fingers.

"Silly old goose," she murmured; "big old silly goose. Just because he's a preacher he wants to boss all the time. Can't boss me. I won't be bossed. I like to boss myself. I won't let my beautiful old David go off out there to flirt with the nurses and Indian girls and whoever else is out there. I should say not. I'll stick right along, and whenever a woman turns our way, I'll shout: 'Married! He is mine!'"

David laughed at her passionate discussion to herself.

"Besides, I have been learning a lot of things. I've been talking to the doctor privately when you couldn't hear."

"Indeed!"

"Oh, yes, and we are great friends. He says if we just live clean, white, sanitary lives, I am safe. I must keep strong and fat, and the germs can't get a start. And he has been telling me lots of nice things to do. David, I know I can help you. The doctor said so. He says I must be happy and gay, and be positively sure you will be well again in time, and I can do you more good than a tonic. Yes, he said that very thing, Doctor O'Hara did. Now please beg my pardon, and maybe I'll forgive you."

David promptly did, and peace was restored.

A committee of brotherly ministers was sent out from the Presbytery to find how things were going in the little manse in the Heights. Very gently, very tenderly they made their inquiries of Carol, and Carol answered frankly.

"With the furniture money we have six hundred dollars," she told them rather proudly.

"That's just fine. It will take you to Albuquerque and keep you straight for a few months, and by that time we'll have things in hand back here. You know, Mrs. Duke, you and David belong to us, and we are going to see you through. And then when it is all over we'll get him a church out there. Why, everything is going splendidly. Now, remember, it may be a few months, or it may be ten years, but we are back of you, and we are going to see you through. Don't ever wonder where next month's board is to come from. It will come. It isn't charity, Mrs. Duke. It is just the big brotherhood of the church, that's all. We are going to be your brothers, and fathers, and—mothers, too, if you will have us."

The devoted mansers rallied around them, weeping over them, giving them good advice, along with other more material, but not more helpful, assistance and declaring they always knew David was too good to live. And when Carol resentfully assured them that David was still very much alive, and maybe wasn't as good as they thought, they retaliated by suggesting that her life was in no danger on that score.

On the occasion of Doctor O'Hara's last visit, Carol followed him out to the porch.

"You haven't presented your bill," she reminded him. "And it's a good thing for you we are preachers or we might have slipped away in the night."

"I haven't any bill against you," he said, smiling kindly down at her.

Carol flushed. "Doctor," she protested, "we expected to pay you. We have the money. We don't want you to think we can't afford it. We knew you were an expensive doctor, but we wanted you anyhow."

He smiled again. "I know you have the money, but, my dear little girl, you are going to need every cent of it and more too before you get rid of this specter. But I couldn't charge David anything if he were a millionaire. Don't you understand—this is the only way we doctors have of showing what we think of the big work these preachers are doing here and there around the country?"

"But, doctor," said Carol confusedly, "we are—Presbyterians, you know—we are Protestants."

The doctor laughed. "And I am a Catholic. But what is your point? David is doing good work, not my kind perhaps, and not my way, but I hope, my dear, we are big enough and broad enough to take off our hats to a good worker whether he does things just our way or not."

Carol looked abashed. She caught her under lip between her teeth, and kept here eyes upon the floor for a moment. Finally she faced him bravely.

"I wasn't big or broad—not even a little teensy bit," she said honestly. "I was a little, shut-in, self-centered goose. But I believe I am learning things now. You are grand," she said, holding out her slender hand.

The doctor took it in his. "Carol, don't forget to laugh when you get to Albuquerque. You will be sick, and sorry, and there will be sobs in your heart, and your soul will cry aloud, but—keep laughing, for David is going to need it."

Carol went directly to her husband.

"David, I am learning lots of perfectly wonderful things. If I live to be a thousand years old—oh, David, I believe by that time I can love everybody on earth, and have sympathy for all and condemnation for none; and I will really know that nearly everyone in the world is *very good*, and those that are not are *pretty* good."

David burst into laughter at her words. "Poorly expressed, but finely meant," he cried. "Are you trying to become the preacher in our family?"

"All packed up and ready to start," she said thoughtfully, "and tomorrow night we leave our darling little manse, and our precious old mansers, and turn cowboy. Aren't you glad you didn't send me home?"

CHAPTER X

WHERE HEALTH BEGINS

In a little white cottage tent, at the end of a long row of minutely similar little white cottage tents, sat David and Carol in the early evening of a day in May, looking wistfully out at the wide sweep of gray mesa land, reaching miles away to the mountains, blue and solemn in the distance.

"Do—do you feel better yet, David?" Carol asked at last, desperately determined to break the menacing silence.

David drew his breath. "I can't seem to notice any difference yet," he replied honestly. "It doesn't look much like Missouri, does it?"

"It is pretty—very pretty," she said resolutely.

"Carol, be a good Presbyterian and tell the truth. Do you wish you had gone home, to green and grassy Iowa?"

"David Duke, I am at home, and here is where I want to be and no place else in the world. It is big and bleak and bare, but—— You *are* going to get well, aren't you, David?"

"Of course I am, but give me time. Even Miracle Land can't transform weakness to health in two hours."

"I must go over to the office. Mrs. Hartley said she wanted to give me some instructions." Carol rose quickly and stepped outside the cottage.

Crossing the mesa she met three men who stopped her with a gesture. They were of sadly similar appearance, tall, thin, shoulders stooped, hair dull and lusterless, eyes dry and bright. Carol thought at first they were brothers, and so they were—brothers in the grip of the great white plague.

"Are you a lunger?" ejaculated one of them in astonishment, noting the light in her eyes and the flush in her cheeks.

"A—lunger?"

"Yes—have you got the bugs?"

"The bugs!"

"Say, are you chasing the cure?"

"Of course not," interrupted the oldest of the three impatiently. "There's nothing the matter with her, except that she's a lunger's wife. Your husband is the minister from St. Louis, isn't he?"

"Yes—I am Mrs. Duke."

"I am Thompson. I used to be a medical missionary in the Ozarks. How is your husband?"

"Oh, he is doing nicely," she said brightly—the brightness assumed to hide the fear in her heart that some day David might look like that.

Thompson laughed disagreeably. "Sure, they always do nicely at first. But when the bugs get 'em, they're gone. They think they're better; they say they are getting well—God!"

Carol looked at him with questioning reproach in the shadowed eyes. "It does not hurt us to hope, at least," she said gently. "It does no harm, and it makes us happier."

"Oh, yes," came the bitter answer. "Sure it does. But wait a few years. Bugs eat hope and happiness as well as lungs."

Carol quivered. "You make me afraid," she said.

"Thompson is an old croak," interrupted one of the younger men, smiling encouragement. "Don't waste your time on him—talk to me. He is such a grouch that he gives the bugs a regular bed to sleep in. He'd have been well years ago if he hadn't been such a chronic kicker. Cheer up, Mrs. Duke. Of course your husband will get along. Got it right at the start, didn't you?"

"Oh, yes, right at the very start."

"That's good. Most people fool around too long and then it's too late, and all their own fault. Sure, your husband is all right. It's too bad Thompson can't die, isn't it? He's got too mean a disposition to keep on living with white folks."

"Oh, I shouldn't say that," disclaimed Carol quickly. "He—he is just not quite like the people I have known. I didn't know how to take him. He was only joking, of course." She smiled forgivingly at him, and Thompson had the grace to flush a little.

"I am Jimmy Jones," said the second man. "I was a bartender in little old Chi. Far cry from a missionary to a bartender, but I'll take my chances on Paradise with Thompson any day."

"A—a bartender." Carol rubbed her slender fingers in bewilderment.

"I am Arnold Barrows, formerly a Latin professor. *Amo, mas, mat,*" said the third man suddenly. "I am looking for my Paradise right here on earth, and I am sorry you are married. My idea of Paradise is a girl like you and a man like me, and everything else go hang."

Carol drew herself up as though poised for flight, a startled bird taking wing.

Thompson and Jones laughed at her horrified face, but the professor maintained his solemn gravity.

"He is just a fool," said the bartender encouragingly. "Don't bother about him. It is not you in particular; he is nuts on all the girls. Cheer up. We're not so bad as we sound. I have a cottage near you. Tell the parson I'll be in tomorrow to give him the latest light on the bonfires in perdition. I know all about them. Tell him we'll organize a combination prayer-meeting; he can lead the prayer, and I'll give advanced lessons in bunny-hugs and fancy fizzes."

"Good night — good night — good night," gasped Carol.

Forgetting her errand to the office, she rushed back to David, to safety, to the sheltering folds of the little white cottage tent.

He questioned her curiously about her experience, and, although she tried to evade the harsher points, he drew every word from her reluctant lips.

"Lunger—and bugs—and chasers—it doesn't sound nice, David."

"But maybe it is the best thing, after all. We are not used to it yet, but I suppose it is better for them to take it lightly and laugh and be funny about it. They have to spend a lifetime with the specter, you know—maybe the joking takes away some of the grimness."

Carol shivered a little.

"Aren't you going to the office?"

"No, I am not. If Mrs. Hartley wants to see me, she can come here. I am scared, honestly. Let's do something. Let's go to bed, David."

It was a two-roomed cottage, a thin canvas wall separating the rooms. There were window flaps on every side, and conscientiously Carol left them every one upraised, although she had goose flesh every time she glanced into the black wall of darkness outside the circle of their lights, a wall only punctuated by the yellow rays of light here and there, where the more riotous guests of the institution were dissipating up to the wicked hour of 9 o'clock.

"Good night, David—you will call me if you want anything, won't you?" And Carol leaped into bed, desperately afraid a lizard or a scorpion or a centipede might lie beneath in wait for unwary pink toes once the guarding lights were out.

This was the land where health began—the land of pure, light air, of clear and penetrating sunshine, the land of ruddy cheeks and bounding blood. This was the land which would bring color back to the pale face of David, would restore the vigor to his step, the ring to his voice. It was the land where health began.

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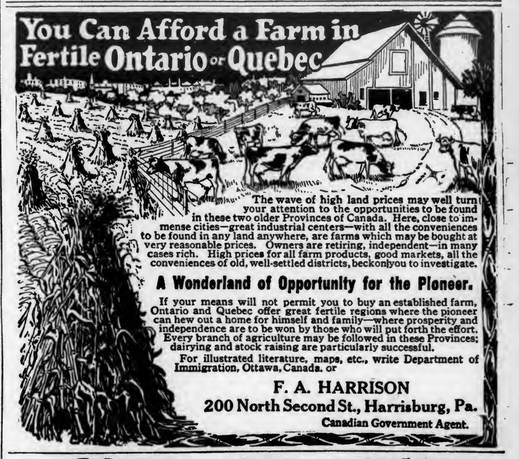

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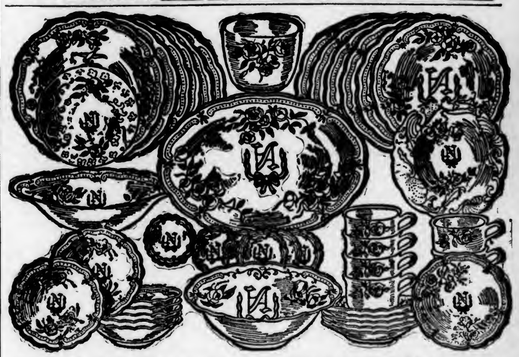

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M. C. SEITZ, N9 Chicago, Ill.

she did love it. It was a rich, beautiful, gracious land—gray, sandy, barren, but green with promise to Carol and to David, as it had been to thousands of others who came that way with a burden of weakness buoyed by hope.

A shrill shriek sounded outside the tent—a dangerous rustling in the sand, a crinkling of dead leaves in the corners of the steps, a ring, a roar, a wild tumult. Something whirled to the floor in David's room, papers rattled, curtains flapped, and there was a metallic patter on the uncarpeted floor of the tent. Carol gave an indistinct murmur of fear, and burrowed beneath the covers.

It was David who threw back the blankets and turned on the lights. Just a sand storm, that was all—a common sand storm, without which New Mexico might be almost any other place on earth. David's Bible had been whirled from the window ledge, and fine sand was piling in through the screens.

Carol withdrew from the covers most courageously when she heard the comforting click of the electric switch and the reassuring squeak of David's feet on the floor of the room.

"Everything's all right," he called to her. "Don't get scared. Will you help me put these flaps down?"

Carol leaped from her bed at that, and ran to lower the windows. Then she sat by David's side while the storm raged outside, roaring and piling sand against the little tent.

After that, to bed once more, still determinedly in love with the land of health, and praying fervently for morning.

Soon David's heavy breathing proclaimed him sound asleep. But sleep would not come to Carol. She gazed as one hypnotized into the starry brightness of the black sky as she could see it through the window beside her. How ominously dark it was! Softly she slipped out of bed and lowered the flaps of the window. She did not like that darkness. After the storm, David had insisted the windows must be opened again—that was the first law of lungers and chasers.

She was cold when she got back into bed, for the chill of the mountain nights was new to her. And an hour later, when she was almost dozing, footsteps prowled about the tent, loitering in the leaves outside her western window. David was sleeping; she must not interfere with a moment of his restoring rest. She clasped her hands beneath the covers, and moistened her feverish lips. It it were an Indian lurking there, his deadly tomahawk upraised, she prayed he might strike the fatal blow at once. But the steps passed, and she climbed on her knees and lowered the flaps on the side where the steps sounded.

Later the sudden tinkle of a bell across the grounds startled her into sitting posture. No, it wasn't David, after all—somebody else—some other woman's David, likely, ringing for the nurse. Carol sighed. How could David get well and strong out here, with all these other sick ones to wring his heart with pity? Were the doctors surely right—was this the land of health?

Again footsteps approached the tent, stirring up the dry sand, and again Carol held her breath until they had passed. Then she grimly closed the windows on the third side of her room, and smiled to herself as she thought: "I'll get them up again before David is awake."

But she crept into bed and slept at last.

Early, very early, she was awakened by the sunlight pouring upon the flaps at the windows. It was 5 o'clock, and very cold. Carol wrapped a blanket about her, and peeked in upon her husband.

"Good morning," she greeted him brightly. "Isn't it lovely and bright? How is my nice old boy? Nearly well?"

"Just fine. How did you sleep?"

"Like a top," she declared.

"Were you afraid?"

"Um, not exactly," she denied, glancing at him with sudden suspicion.

"Did the wind blow all your flaps down?"

"How did you know?"

"Oh, I was up long ago looking in on you. We'll get a room over in the main building today. It costs more, but the accommodations are so much better. We are directly on the path from the street, so we hear every passing footstep."

Carol blushed. "I am not afraid," she insisted.

"We'll get a room, just the same. It will be easier for you all the way around."

Carol flung open the door and gazed out upon the land of health. The long, desolate mesa land stretched far away to the mountains, now showing pink and rosy in the early sunshine. The little white tents about them were as suggestively pitiful as before. There were no trees, no flowers, no carpeting grass to brighten the desolation.

Bare, bleak, sandy slopes reached to the mountains on every side. David sat up in bed and looked out with her.

"Just a long, bare slope of sand, isn't it?" she whispered. "Sand and cactus—no roses blooming here upon the sandy slopes."

"Yes, just sandy slopes to the mountains—but, Carol, they are sunny—bare and bleak, but still they are sunny for us. Let's not lose sight of that."

(To be continued)

The Sixth Decennial Census, taken in 1840, was the first one to cover agricultural statistics, now one of the most important parts of the entire census.

About 650 people were engaged in taking the first census of the United States. The 1920 census will require the services of 90,000.

The country's biggest rancher—what he thinks about the packers

Robert J. Kleburg is manager of the "Million Acre Ranch" in Texas. He keeps about 40,000 breeding cattle. The following is from his remarks made recently before a committee:

"Their (the packers') business prospers most when they have an ample and regular supply of live stock from which to draw.

"It therefore follows, as a matter of course, that it is to the interests of the packers to foster, not to hamper, live stock production. In order to do this they must pay the producer of live stock a fair price for his products, so that he, the producer, may be enabled to stay in business.

"I therefore contend and believe that the producer of live stock who conducts his business properly has nothing whatever to fear from the packers. He needs the packers to prepare his product for the market and to distribute it.

"Without the aid of the packers the production of live stock could not exist as an industry.

"I can well remember when there was no real market for live stock in the part of the country in which I lived—southwest Texas.

"In those days we drove the steer to the butcher's pen. The butcher would slaughter him, throw away the head, horns, hoofs and other offal, and give the producer credit for so much meat at his shop. All of this waste is now saved and marketed. * * * *

"I believe that when a business is as big as the packers' business, that business has to be conducted properly and on business lines and on principles of fairness to the public.

"I do not believe they can afford in their own interests to conduct their business in such a way that it injures the great mass of people with whom they do business. * * * *

"Nor do I believe that the packer can control the law of supply and demand."

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A Dairy Country Below Sea Level

R. W. BALDERSTON

[This is the second letter we have received from the secretary of the Interstate Milk Producers' Association regarding his trip to Germany for a six months' stay, under the direction of Mr. Hoover, to help feed the German children.—EDITOR.]

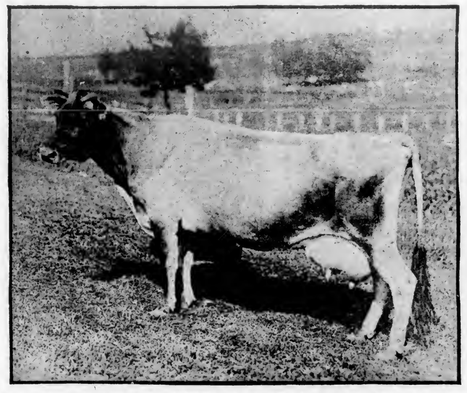
To the newcomer Holland presents a very striking picture, and particularly if he be interested in things agricultural. Many of us acquainted with the level stretches of the Eastern Shore or New Jersey can hardly imagine anything more level. But Holland is more level, and its level fields average five feet below sea level. The parts which have been reclaimed are all teeming with a population that owes its life to the tireless pumping of the innumerable Dutch windmills, whose broad wings are always included in any conventionel Dutch landscape. During the last two days of 1919 the farmers were all out in their fields, plowing such of them as they can drain sufficiently, turning over some others with the old, laborious spade—though this is not so common now—or in the ditches, cleaning and deepening them for the next year. These ditches start with mere furrows, beautifully straight and equidistant about every hundred yards; where they empty at the end of the field is a big, wide stream, which seems to divide the fields and must be bridged to gain access. Sometimes this stream sluggishly runs to a windmill, which pumps the water up to the canal to carry it to the sea.

The fields were being manured, in many cases by hand, from heaps that were evidently dumped from the three-wheeled carts which are drawn about the farms by horses which are attached to a mere hook above the swivel front wheel and which seem not to need any tongue. The grass was still green, and showed even in winter the effect of good care, for the sod was always thick and healthy. Small flocks of sheep and some heifers and colts still browsed about, but the dairy cows were housed, literally, for quite generally house and barn would be one building. The women would be seen caring for the stock as we rode by, and the farm yards looked clean and well ordered as a result of their labors. There was some American farming machinery to be seen, but in most cases it was evidently European, and the big plows were drawn by sturdy horses.

On New Year's Day everybody took a holiday. It was clear (for a change), and good clothes could be exhibited. We didn't see many of the characteristic Dutch costumes; it looked much like rural United States out for a good time. But they don't use automobiles here. Many lads and lassies were out on the ubiquitous bicycles (solid rubber tires), and the old folks rode in typical "one-hoss shays"—just two heavy wheels, a big, roomy canvas-covered cart bed mounted with a kind of springs, and the old, faithful farm horse took them to church very comfortably. The city folks were out in more elaborate vehicles of the same general type. But most people walked or rode on the comfortable Dutch trolleys and trams.

One could but admire the energy and perseverance of the people of Holland and want to go back to see the results of their labors at the time of the harvest. I rode through the bulb districts of Harlem, passed the great peat bogs which furnish a large part of their fuel, crossed the great pasture fields between Rotterdam and Amsterdam, walked in the beautiful parks of The Hague and by the sea at Zantvoort, and altogether saw much more than one would expect of the compact little kingdom of the gracious Queen Wilhelmina in the three days at our disposal, waiting for the detail-loving officials to vise passports and the train to start for Berlin.

We met only the greatest courtesy from officials. Our baggage was sent through without question, because of the charitable character of our mission, and we all came away with great love and admiration for this people, who have had to be ever at work in order to hold their fertile farms from generation to generation from the encroachments of the sea and who have even dared to drive it back to get more acres to furnish food for their teeming cities and to have some supplies to export in exchange for those things they cannot themselves produce.



A Jersey cow, "Beaudesert Pet," presented to the Conn. Agri. College by Col. A. V. Barnes

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We have been about a week in Germany now, and I hope to have a German story to follow soon. I am investigating milk distribution in various cities now, and cannot well get out to the country, especially as I find it rains most generally in Hamburg. We were in Berlin last week, and our committee has now scattered somewhat. Conditions here are not encouraging, but can be very materially improved if the United States, or, better, the whole Entente, wakes up to the fact that Germany cannot be expected to pay any indemnity on an empty stomach, with idle factories and without adequate transportation. We have talked with many who gave us most interesting accounts of present economic conditions, but one week does not begin to give us a chance to see much first hand.

Hamburg, Germany, Jan. 11, 1920.

Feeder Cattle and Sheep for Eastern States

W. H. TOMHAVE

A review of the stocker and feeder cattle shipments from the Chicago market during the past year gives a total of 50,030 head of cattle of this class shipped into Pennsylvania. Illinois leads with a total of 177,312 head, Indiana second with 73,538 head, Ohio third with 63,952 head, and Pennsylvania fourth. This number does not cover all the cattle fed in the state, but only those shipped from one market. The number shipped from other markets will far exceed the number brought in from the Chicago market. The largest shipments were made during the months of August, September, October, November and December. The reason for the large shipments at that season of the year is due to the activity of the feeder market in filling the feed lots in the state. New York received 9872 cattle from the Chicago market during this same period, thus indicating the lack of large cattle-feeding centers in that state such as are found in eastern Pennsylvania. The total number shipped from this market during the twelve months of 1919 was 508,871 head.

The total number of feeder sheep shipped from the Chicago market during this same period was 1,106,034 head. Illinois leads with 325,677, Michigan second with 230,019 head, Indiana third with 118,577, Ohio fourth with 109,692, and New York fifth with a total of 90,926 head. Pennsylvania received only 14,858 head. The sheep-feeding industry has never been fully developed in Pennsylvania, and it seems that more lambs should be shipped in and fattened each year on the Pennsylvania farms. New York, on the other hand, holds an important place in the sheep-feeding industry of the country.

Suggested Live Stock Rations

The following are the live stock rations for February suggested by the animal husbandry workers at the state college of agriculture at Ithaca, N. Y. In the case of the dairy cow ration the approximate cost is also given.

For dairy cows: 300 pounds wheat bran, $7.68; 200 pounds cornmeal, $6.72; 200 pounds oil meal, $8.22; 300 pounds gluten feed, $11.73; 1000 pounds will cost $34.35; 100 pounds will cost $3.44; 2000 pounds will cost $68.70. The cost of 2000 pounds of this ration in January was $67.80.

For calves and young stock: 300 pounds ground oats, 300 pounds hominy or ground barley, 300 pounds wheat bran, 100 pounds oil meal.

Live Stock and Dairy Special

March 15th is when our annual live stock and dairy number will be issued, so it is time now to send us something to appear in it. We will pay a dollar for each letter we use, and feel certain that many of our readers could send us interesting ones if they would take time to write them. Tell us about only one thing in each letter, but there are so many phases to the live stock industry that you can easily write two or three letters on entirely different subjects. We want swine, sheep, beef cattle, dairy cows and horses all represented in our special, so do not fear that those who always write can tell all there is to be known. Letters must reach us not later than March 1st, and if stamps are enclosed we will return those we cannot use in our special issue.

Results of Pasturing Pigs

The economy of pasturing pigs is shown by the results of thirty-three forage crop demonstrations conducted in fourteen counties of this state last year by the animal husbandry extension service of the Pennsylvania State College. A summary of these demonstrations shows that it required 475 pounds of grain to produce 100 pounds of pork when pigs were fed in the dry lot, while 312 pounds of grain produced the same amount of gain when pigs were on pasture. The saving in grain bill was 34.3 per cent. There is another phase to be considered. Health, vigor and rapidity of growth are valued by experienced swine raisers as much as the saving in feed cost. They mean an efficient herd and one in which disease is not liable to gain a foothold.

Over 1000 pigs were used in these demonstrations, which ran 114 days. The quality of the animals was that of average feeder hogs found on Pennsylvania farms. At the beginning of the period they averaged 45 pounds. The average final weight was 134 pounds, making a daily gain of .78 pounds. Cost of producing the forage crops was computed from man and horse labor, rent of land, seed, fertilizer and fences. This amounted to $2.43 for each 100 pounds gain in the herds. Labor in feeding and interest on investment came to $0.84 per 100 pounds gain. Grain cost is the determining factor, amounting to over 75 per cent. of the total cost of production. Thus a saving in the amount of grain used goes a long way toward the efficiency of producing pork. Under present conditions it often means the difference between profit or loss on the year's work for the swine grower.

Nothing makes a better hog pasture than alfalfa or clover. Rape is good, and may be sown early enough to make pasture for spring pigs as soon as they are ready for it.

Recognizing the Dairy Type

M. G. FEINT

It is of great importance that any man who buys dairy cows, young heifers intended for future milking, or heifer calves, should be able to recognize the signs that point to a heavy yield of milk. The smallest cattle owner, as well as the owner of the big dairy herd, needs to be familiar with the milking type. Without some standard to compare with, one cannot get very far in judging of the quality of stock.

There is one place where all dairymen can study types and arrive at a standard in a way, and that is the exhibits of dairy cattle at the fairs. Here one can not only see good types, but one can get an idea of mating animals so as to improve the type. It is one thing to have quality, and another to transmit it. Sires and their get give breeders many object lessons in proper mating.

There is no better place to learn the outward symptoms of heavy milking abilities than in listening to the lecture and see the illustration of what he means at the stock-judging contests for boys at fairs that are so popular of late years. The instructor is generally a man well fitted to teach the recognition of the type, and, what is better, he has fine stock to illustrate his points. The classes the boys are allowed to judge are far better stock than the average dairyman ever has the chance to own, unless he studies the matter of breeding it for himself.

At one contest the writer witnessed last year. one of the cows in the class of four, it later developed, was valued at $10,000, and the calves from any one of them would have sold for $500. It was a great privilege to see and know why these animals excelled.

Perhaps one of the greatest object lessons the state has ever seen in the line of teaching the recognition of milking qualities was the exhibit last fall of nine well-bred Holstein cows picked from the state's herd of 1750 cows that are kept on various institution farms and placed on exhibition at the New York State Fair. The cattle were apparently a uniform lot, all sleek and well cared for. But charts on the walls, giving the records of each, though not identifying them with the cows that made them, showed that their milk production varied in even steps of four thousand and some pounds, six thousand, eight thousand, etc., up to over twenty thousand pounds for the year. The public was invited to test their skill in recognizing the type by guessing which cows made the various records. Prizes to the value of $1000 were offered for the seven best guesses.

The fact that in the eight years the state institution farms had run these dairies the average milk production per cow had been doubled shows skilful feeding and skilful breeding. The methods used were those considered the best by leading dairymen—liberal feeds of succulent roughage the year round, even when on pasture; 1 pound of a carefully planned grain ration to every 3½ pounds of milk produced; sanitary, sunny stables, and good general care.

The use of the milk scales and the dairy record sheets was one of the big factors in bringing up the herd's average production, and the state department of farms and markets staged the exhibit to prove to dairymen how important these items are in building up a herd that will produce milk economically. For these nine cows, all receiving about the same care and feed, with one producing a little over 4000 pounds of milk yearly, and others producing 10,000 to 20,000, clearly demonstrated that the cost per quart of milk in the latter type of cow is a great deal less than in the ordinary cow.

It is of interest to know that in 7305 guesses none were correct. Only twelve placed even so many as five correctly, 103 placed four correctly, 523 placed three correctly, 1496 placed two correctly, 2751 placed one correctly, while 2418 placed none correctly.

Three of the prize winners were rural women. The first prize was won by Mrs. Nelson Thackeray, of Guilford, who for many years lived on a farm, and whose husband since has been a cattle dealer. She has heard the qualities of cattle discussed all her life, and of late years had visited the big sales of pure-bred Holsteins with her husband. Here she had studied the type of cows that seemed to be the best producers, and had arrived at a standard of her own. That this was fairly correct was demonstrated by her placing of these cows. Her prize was a valuable pure-bred Holstein bull calf.

Two other valuable calves were won by Earl D. Crocker, of Sennett, and H. E. Criswell, of Vernon Center.

Mr. Crocker has a big herd of pure-bred Guernseys, and his disposal of his prize calf was an object lesson to all public-spirited rural citizens. He knew his farm bureau association, like all others of its kind, needed money. He also wanted someone to get the calf that could make good use of it. So he accomplished two good deeds by putting the calf up at auction and donating the proceeds to his farm bureau.

Mr. Crisswell already had a few fine female pure-bred Holsteins, and the calf he secured was just what he needed. His wife and boys were fired with zeal to buy several registered heifers as a start towards a real business in pure breds.

At the recent intensive campaign in New York state to secure more members in the Holstein Breeders' Associations and to federate the county associations, officers of the National Holstein-Friesian Association brought out the fact that it would be an impossibility to produce too many pure-bred Holsteins in this generation, as there are now only 175,000 in existence in the United States, as compared to 2,000,000 common cows. It was shown that the average pure bred produces 100 pounds of milk at one-half the cost of the same amount produced by a scrub cow. It is well known that females of all ages are always in great demand and that breeders seldom have to advertise them for sale.

Several neighbors of the writer turn off a bunch of heifer calves and cows quite frequently at $300 for calves up to $1500 for the cows, with no advertising whatever. The demand is excellent. Those who are most successful in breeding the right type invariably attribute their success to getting a start with high-class animals. The initial cost is not worth considering when buying foundation stock, as compared to later results.

There is no better way to stimulate interest in the business than to start calf clubs for boys and girls. The youngsters usually clear $50 to $100 or perhaps more in their season's work. They learn to love the work, and are apt to buy back their own calves and use them as a nucleus of a herd. Their elders are also pretty sure to get interested in the proposition. Ask your farm bureau agent to arrange for such a club in your section this year, if there has never been one there or if interest in high-grade cows is lacking.

New York.

Milk Producers Organizing

President F. P. Willets, of the Interstate Milk Producers' Association, in the course of an address before dairymen at the recent farm products show in Harrisburg, made the following timely observations:

"There seems to be one feature of co-operative dairying which appeals to me above everything else, and that is co-operative selling. While there are connections with the dairy interests which can be used in a smaller way co-operatively, such as cow-testing associations, bull associations, a general trend to improve the dairy herds and improve milk quality, it seems to me the main thing to be considered collectively is the selling of dairy products. Up to about five years ago, milk organizations throughout the country had been very small, but at that time there seemed to be a spontaneous effort on the part of the dairymen from the Atlantic to the Pacific to strengthen such associations that had been organized and to organize new ones. It is very surprising to me how this has grown, because we have now organizations in New England, New York, Philadelphia, Baltimore, Pittsburgh, Cleveland, Detroit, St. Louis, Washington state, Oregon, California and many other places. These organizations have now a membership of over 300,000. They have been organized into a National Federation, whereby the heads of the local organizations are brought together and exchange the thoughts and experiences one with the other, and we learn what the conditions are, both milk being sold as whole milk and milk which is manufactured into milk products. We learn as to the different ways of taking care of the surplus milk, what can be done to correct it; how various associations organize, on what basis of support; whether the proper way of taking care of milk in your immediate center is through dealers or by your own efforts of distribution or manufacture. We cannot meet these various men, who are giving their best thought and effort for the benefit of the dairy interests, without being benefited thereby.

"Now, what is the purpose of all this effort? It seems to me, first, it is to get an adequate and a fair price for dairy products. There are so many different dairies situated in the open country, and when they attempt to dispose of their products singly there are almost as many different prices, because each buyer of milk attempted to buy for the minimum dollar, and the producer attempted to receive the very best he could get individually. Handlers of dairy products were organizing and were making their purchasing power stronger by that effort, and for the producers to receive their share of what was being exacted from the public had to be done with united force of the producers, because the selling power had to be as strong as the buying power. There is a great deal expected and demanded from the heads of these various milk organizations, because they educate the producers to the necessity, not only the necessity, but also to have confidence, that this is the only way in which a just price can be obtained. Also, it is their duty to educate the dealers in dairy products to the necessity of the producers being paid sufficient to warrant them not only to remain in the business, but to encourage their families and their children to be satisfied so that they will also remain in the business. And, again, it is necessary for the organization to go beyond this and reach out to the consuming public to educate them to the necessity, for their own protection, of paying what the dairy products are worth, so that the farmer and his family will be encouraged to remain in the business and to have the opportunity of all advantages which their city cousins have. They must have means whereby they can educate their family and give them the same pleasures that the city people have, or the young people will not remain in the country, and if they do not remain in the country, not only milk, but all food products, will not be produced. We realize full well that for a number of years there have been less people living in the open country producing, and more in the centralized places consuming. If this continues it will not be many years until there will be such a shortage of dairy products, as well as other foods, that it will be necessary for an exorbitant price to be paid to induce people to return to the country, or we will become in the same condition as the greater part of Europe is in at the present time.

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gives that even, golden shade everybody wants. *Purely vegetable.* Harmless. Meets all laws. Small bottle costs few cents at any store. Enough to color 500 lbs.

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Large strains, all ages, mated not akin. Breed Sows, Service Boars, Lincoln Service Bucks, Grade Guernsey and Holstein Calves. Collies and Beagle Pups.
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REGISTERED BERKSHIRES Two splendid sow pigs, six months old. One fine gilt, bred for spring farrow. Prices reasonable. W. F. McSparran, Furnius, Pa.

DUROC BOAR $50. Open Gilts $50, registered. Black Leghorn Cockerels, $2 up, hens $2 and $3 each. R. Wilson, Bloomville, O.

Among the Sheep Toward Spring

R. B. RUSHING

There is no class of farm animals in which there is so wide a difference of opinion as to their care and keeping during the winter season as sheep. Some farmers advocate closely housing them during the winter, while others will tell you to give them the run of an open field or pasture all winter long. Having had some little experience of about fifteen years myself, I will tell my method of handling sheep. My experience is that in order to bring your flock out in the spring in the best possible condition it is well to look to their interests through the cold winter months, and most especially those that are due to be mothers of lambs in the spring.

It is not a strange sight to see whole flocks dying with some contagious disease or parasite, and this is more often in the spring than at any other season of the year, and is quite often brought on by the many hardships they are often compelled to undergo during the cold winter months. This, however, is not always the case, for many farmers care for their sheep properly; but there are still enough that do not to make it important to call it to mind. The sheep is at best a very timid animal, and easily contracts disease, and in order to keep them in a healthy condition we should use every available effort to keep them well, as a cent's worth of preventative is usually equal to a dollar's worth of cure.

I always look to the sanitary conditions of my sheep barn and sheds where my sheep are being wintered. I thoroughly clean every portion of them, and then give them a good coat of whitewash inside and out. This makes it lighter and nicer for the sheep, and will exterminate most all disease germs that have accumulated. For the best results it is always best to have these sheds or barns cut off in stails or runways so you can separate your flock to the best advantage. I never like to stall too many sheep in the same place, as the heat caused from the bunch is dangerous, as they are most likely to catch cold when they are turned out in the open air. In January I always separate my ewes from the rest of the flock, and especially those that are pregnant; in order to keep them from being knocked or cuffed about by the rest of the sheep, as sometimes the slightest damage to a ewe will practically ruin her for breeding purposes, besides losing the lamb.

Much is said in regard to the proper kind of food and the amount to be fed to sheep, and indeed it is an item worthy of consideration, and good judgment should always be used. In feeding grain to my sheep I use a long, shallow trough three feet wide, and for their grain ration I use corn and oats. Most any grain is good for sheep, but I am a firm believer in grinding their feed. I like to grind two or three grains together and then feed just what they need, and this can be learned by closely watching their condition from day to day. Plenty of good roughage is something that is very essential to the flock's welfare. A mixture of two or three different kinds of hay is good, and sheaf oats are fine. Corn stover, cut up and salted, is also good, and, of course, any of the legumes that you can raise are good. Of course, even though the weather is cold, the sheep require water, and this should be placed within their reach at all times where they can help themselves, and it may be necessary to use a large tank with a heater to have the water so they will drink it. On snowy or otherwise rough days I keep my sheep under shelter, and turn them out during bright, sunny weather for exercise, as being shedded on bright, calm days is very distasteful to them.

I have spent more nights than one in the sheep barn on extremely rough times, and it paid, and I may do it again. You may have to if you get most dollars out of the flock. It is pretty rough sometimes, but it may pay you big.

Illinois.

A Guernsey Sire Makes Good

The best way to measure a bull's influence on his breed is to determine whether his daughters have been better or poorer producers of milk and butterfat than were their dams.

The dairy department of the New Jersey Agricultural Experiment Station is analyzing the advanced register records that it supervises, in order to determine whether the sires of cows tested have been an influence for the betterment or detriment of the breed. The exact amount of each sire's influence is also determined.

Ne Plus Ultra 15265 it was found stood at the head of the list of Guernsey sires for the year ending July 1, 1919. The production of his daughters completing their records during the year averaged 25 per cent. higher than the best records of their dams. When his entire list of tested daughters is considered, the comparison is even more striking. Seventeen of his daughters that have been entered in the advanced register also have dams with advanced register records. When allowance is made for under age records, the average yearly butterfat production of seventeen daughters is 706 pounds, while the average for the seventeen dams is 553 pounds; this is an increase of 153 pounds of butterfat, or 27 per cent.

Sometimes when we see the offspring of a bull enjoying the popularity and bringing the prices that the sons and daughters of Ne Plus Ultra are, we wonder whether this popularity is based on fact or whether it is just one of those passing fads, with no real foundation, with which the live stock industry has been afflicted from time to time.

New Jersey produces annually 100,000,000 gallons of milk, valued at approximately $30,000,000. If every dairy sire used in the state should increase the production of his daughters over their dams by the same percentage that Ne Plus Ultra did, it would mean an annual increase of 27,000,000 gallons of milk, with a value of about $7,000,000.

The above figures tell only a very small part of the story. Ne Plus Ultra was bred to cows of high-producing ability. This is shown by the fact that the seventeen dams mentioned averaged, on the basis of mature cows, 553 pounds of butterfat per year. If every sire used in the state had the same ability to sire production as Ne Plus Ultra had, the increase in value of diary products would be greatly in excess of $7,000,000.

Ne Plus Ultra was bred by F. Lothrop Ames, North Easton, Mass. In 1909 he was purchased as a calf by J. L. Hope, of Madison, N. J., and S. M. Shoemaker, of Eccleston, Md., and was used jointly by them for a period of nine years.

His breeding was excellent. But many bulls with excellent breeding have failed to accomplish what Ne Plus Ultra has accomplished. Many bulls also have had the power to improve greatly the producing ability of the herds in which they have been used, but were not given a chance, and their great prepotency was discovered after they were dead. To Mr. Hope and Mr. Shoemaker must be given great credit for having the vision to foresee the possibilities of this great bull and to see to it that use was made of the rare power that he had. It is vision of this kind that has made for them the reputation of great breeders of Guernsey cattle that they both bear. The Guernsey breed is better for Ne Plus Ultra's having lived. The good that he has done lives after him.—W. M. Regan.

First Ayrshire Club

The first Ayrshire bull club in America was recently organized at Coudersport, Pa., by County Agent Bert Straw, of Potter county. Four units of three farms each compose the club, the twelve members owning 175 head of Ayrshire cattle. The young sires of this club were purchased from Penshurst Farm. They are all by Kate's Champion of Penshurst, a son of Auchenbrain Brown Kate IV, ex-champion of the breed; record, 23,022 pounds milk, 917.6 pounds fat.

At the annual meeting of the National Spotted Poland China Association, in Chicago, Henry Field, the well-known seedsman, was elected president of this association by a practically unanimous vote. This is a merited recognition of Henry Field's progressive business methods and of his success as owner of one of the largest herds of Spotted Poland Chinas in the country.

Paint does not make the barn, any more than clothes make the man. Nevertheless, a well-painted, neat barn is fairly good evidence that the owner is efficient and prosperous. Appearances do count.

18,458 Pounds Milk

in a year is the record of this fine Guernsey. Records are worth trying for; but health is an absolute essential. Raise the health standard of your cows, and the milk yield will surprise you.

So Easy to Put Your Dairy On a Good-Health Basis

To be satisfied with anything less than top-notch health in your cows is a foolish waste of milk-income. Most cow sickness is preventable—or curable. With the aid of KOW-KURE, the great cow medicine, such troubles as Abortion, Retained Afterbirth, Barrenness, Scouring, Bunches and Milk Fever can be eliminated from your herd. KOW-KURE acts on the digestive and genital organs—where nearly all cow diseases originate, and aids nature in inducing normal, healthy action. No dairyman who has used KOW-KURE will be without it. Sold by nearly all druggists and feed dealers; 60c and $1.20 packages. Write for our big free book, "THE HOME COW DOCTOR." It is full of facts every dairyman ought to know, and tells just how to treat cow diseases of all kinds.

Dairy Association Co., Lyndonville, Vt.

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Ajax high grade rubber surfaced roofing in rolls of 108 square feet; complete with nails and cement. **KP-302.**
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Rawhide Stone faced gold medal roofing guaranteed fifteen years. Rolls of 108 square feet with nails and cement. KP-303. Per roll............$2.75

Famous Rawhide rubber roofing, 3 ply guaranteed for 12 years. Rolls of 108 sq. ft. with nails and cement. KP-304. 3 ply, per roll, $2.10. 2 ply, per roll, $1.90. 1 ply, per roll, $1.55.

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Per 100 Square Feet **$2.50**

28 gauge painted 2½ in. corrugated overhauled sheets 5½ ft. long. KP-306. Per 100 square feet............$2.50
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24 gauge extra heavy painted 2½ in. corrugated overhauled sheets. KP-308. Per 100 square feet............$4.00

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KP-101.	100 reels or more, per reel	1.55
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KP-103.	25 reels or more, per reel	1.65
KP-104	Less than 25 reels, per reel	1.70

Galvanized Barbed Wire

Quadruple galvanized coated barbed wire bought from the Government, made of 12 gauge open-hearth steel wire, with four point barbs, ⅝ in. long, spaced 3 in. apart. Unlike ordinary standard galvanized barbed wire, this stock is galvanized after weaving and is coated on all surfaces with galvanizing four times as heavy as regular stock, which means that much additional life to the wire. 60 lb. reels containing 750 ft. Prices f.o.b. Pittsburgh, Pa.

Carload lots, 625 reels or more, per reel......$3.15
" " 100 reels or more, per reel...... 3.20
" " 50 reels or more, per reel...... 3.25
" " 25 reels or more, per reel...... 3.30
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One-Piece Sinks $15.95

KP-6520. White porcelain enameled one-piece roll rim sink and back: two nickel-plated faucets, strainer and lead "P" trap complete.
18 in. x 30 in......$15.95
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No Plumbing Needed

KP-1816. Improved Chemical Indoor Toilet, fitted with regular shaped closet seat and cover, finished in birch, mahogany. Cast metal frame and base; steel casing enameled in azure blue. Complete with exhaust pipe and chemicals ready for use $9.95

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Our Garden Special

The Practical Farmer

PUBLISHED CONTINUOUSLY SINCE 1855

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PRIZE LETTER

A Garden and a Living

J. E. MC CORD

OUR farm garden has always played a very important part in our living, both winter and summer. We always plan our garden so that we may enjoy its fresh products from early summer to late fall and then on through the winter. The entire family is interested in the garden because of the great pleasure it brings, and we plan together in the spring, and enjoy its products together on the table throughout the year. It is so vital a part of our living that I believe we enjoy our work in the garden more than some of our neighbors who use products from their garden only in the working season.

There are two parts to our garden. One is rather permanent, and contains raspberries, gooseberries, currants, strawberries, asparagus, horseradish and rhubarb. These are cultivated by a horse cultivator during the summer, and then mulched in the fall with straw and manure. The other part of the garden contains our annual vegetables, and this is so arranged that it is manured in the fall and plowed in the spring. We never spade our garden, as we feel it is not a very efficient way of working. Spading may be all right for some town people with a back-yard garden, but an active farmer cannot afford to use time that way in the spring, nor his wife, either. When the garden is plowed we always work in a little lime with the harrowing to keep the ground in good, sweet and loose condition.

A permanent hotbed and a cold frame are very important to us. In our hotbed we plant, early in March, cabbage, lettuce and cauliflower, which are later transplanted. We have always had good luck in starting tomatoes in the house, and so we always do this. The cold frame is used for hardening off vegetables started in the hotbed, and we also use our cold frame to plant early radishes and lettuce. When these are removed, peppers and egg plants are started in it.

When the garden is started we aim to use all the space, and when one crop is removed we plant another in its place, if possible. When early peas are planted they are followed by late celery; early potatoes by late carrots. Most of our potatoes come from the field, but we always like to have a few early rows in the garden. Peas planted about two weeks after the first planting are followed by late cabbage, snap beans and late beets. Early snap beans are followed by turnips; lettuce by spinach. Radishes and tomatoes are planted in the same row, and the radishes are removed before the tomatoes are ready for all the ground. In among the sweet corn, of which we plant early and late varieties, we plant climbing beans, summer squash, winter squash and cucumbers.

After we have done the best we know how in the garden to prepare the soil and plant the seed, we take out an insurance policy to guarantee a good crop. This insurance policy has saved us from

(Concluded on page 89)

THE prize winning experience letters from our readers dealing with various phases of gardening are in this issue. Each contains a worth while message which will repay careful reading.

A good garden on every farm would mean a better living for the family. Let's make this a "garden" year and not leave all the work to the women

PRIZE LETTER

Women and the Garden

MRS. GEO. S. DAVIS

FIRST of all, if you do not like the work, do not attempt a vegetable garden, for you probably have enough work without it, and can get outdoor exercise in other ways, with poultry, flowers, etc. I like it, and would not be content without my garden to work in. Locate it as close to the house as practical. On the south side, sheltered by the house from cold winds, is ideal, and to save much fret and loss, either have a good hen yard where you can confine the chickens, or a good, tight fence around your garden.

You should have a good coat of manure spread on during the winter or early in spring. We have covered ours with the cleanings of hen roosts and pens, with quite a lot of the fine litter—straw—as the soil is light and lacks humus. Have it well plowed and harrowed early, and what remains unplanted till late should be harrowed often enough to keep down weeds.

Plant in straight, long rows, far enough apart for cultivation with horse or hand cultivator, using hand work only around the plants. If the soil is heavy or hard to work, insist on horse cultivation. My present garden is so soft and light I can easily work it with the hand cultivator as fast as I can walk.

In your choice of varieties it is usually safer to depend on older tested sorts, yet a little experimenting is pleasant and sometimes very profitable. Last year I tried a new tomato, and it gave me a splendid crop of perfect fruit, while my old standby rotted very badly.

If you do not have any help in caring for your garden, plant only what you want most and cannot get without raising, and in quantities you can be sure to care for, but if the men will help out, you can have a good, big garden. Don't let your garden be a burden; don't overwork to care for it. On the other hand, don't be so particular about the housework that you have no time and strength for the garden. Make the garden more a pleasure than profit—a source of health and happiness in both the work and results. Remember, the results obtained are not only for the summer, but throughout the year. Dr. McCollum, with his newer knowledge of nutrition, has placed a new value on the farm garden, as well as the dairy cow.

Maryland.

Wear them all day—
Your feet stay dry and comfortable

A new rubber shoe for farmers—the "U. S." Bootee

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Ordinary leather shoes get soaked and caked with mud in no time. What you need is something that will give you the *comfort* of a leather shoe, combined with the *protection* of a rubber boot.

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Ask for U. S. rubber footwear—it means solid wear and long service for your money.

"U. S." Boots—made in all sizes and styles — Short, Storm King, Sporting, and Hip. In red, black and white.

Ask for "U.S." RUBBER FOOTWEAR

United States Rubber Company

PRIZE LETTER

Marketing the Surplus

FRANK O. DAVIS

ABOUT ten years ago my father began fruit growing—apples and peaches—and since that time he has added more trees each year. Naturally we had to cultivate the young trees. Consequently, besides our large garden, we also had many "patches" of vegetables scattered about the orchard, and the result was that we have always had a surplus to dispose of, in the face of strong competition.

Considerable stuff was disposed of, both to merchants and direct to consumers, and results were much more satisfactory by far in the latter case. We found that where we built up a trade among consumers they relied on us for their requirements and we had a steady outlet that we could depend upon. On the other hand, in selling to merchants we were often disappointed in that they were overstocked. Moreover, they did not pay as well as the consumers did, and compelled us to deal out our pay in their stores, which often worked a hardship upon us. However, they were not as particular as to the quality of the produce as the individual housewife.

In selling direct to consumers, we found it paid to arrange our wares tastefully, or perhaps "temptingly" is the better word to use. Here is where the farm woman can render much assistance. Absolute cleanliness is the watchword in dealing direct with consumers, and it is useless to peddle one's stuff around in dirty containers. It simply won't sell. Even leaves, twigs or trash of any kind should be carefully removed, as well as any dirt that clings to vegetables. Not one bit of decayed stuff should be put in with the good. It takes such a small amount to give one a "black eye" in the sight of the consumer. Hence everything should be sorted carefully before it is offered for sale. Having the good will of a customer is worth a great deal to anyone retailing farm products. An extra ear of corn, a few flowers or something from the farm especially asked for, to the woman who is known to be active in her vicinity, is often the means of getting several additional customers, as she will not be long in telling what good stuff you have, and her friends won't want her to get it all. *Virginia.*

PRIZE LETTER

Give the Garden a Chance

JERRY F. WILLIAMS

JUST how much can be produced on a square rod in a single season would, no doubt, be a revelation even to experienced gardeners. All sorts of combinations may be made, and if there is an abundance of fertilizer and water, crops will grow "jam up" together and often overlap one another. Cucumbers like to hide under corn, beans or anything for a shade. A friend last season set 1100 cabbage plants and, later, 400 tomatoes on a small lot, and grew a grand crop of both, though the soil was far from ideal, and no extra water was used. We make a great mistake by planting too widely on rich soil. Weeds will make a tangled mass with no cultivation, and useful crops will, too, if given a chance. I limed my garden well last season, using farm adviser's rule. I apply stable manure liberally, and generally use some phosphorus or complete commercial fertilizer, and, best of all, I give the thirsty plants extra drink. Cabbage and tomatoes can often be hastened four or five weeks by heavy watering. Try it and be convinced. *Illinois.*

PRIZE LETTER

Rhubarb a Paying Crop

C. O. WARFORD

RHUBARB is a crop that will pay in almost any locality, and helps out any garden from the fact that it comes early in the season, when cash is very acceptable. We plant it in rows four feet apart, with plants set three feet distant in the rows. Setting is always done early in the spring. After setting, a shovelful or forkful of manure is thrown on each hill. Cultivation is given once a week through the season, no hoeing being required, as the spreading leaves smother all weeds. When winter comes, another covering of manure is given the patch, as the soil can hardly be made too rich for this crop. In spring a cultivator is run once or twice between the rows before pulling of the crop takes place. We pull the crop, and tie the stalks in bunches, four stalks to the bunch, and market.

After the rhubarb crop has occupied the ground for three or four years, the hills will spread out until they form great clumps, and in time these clumps will crowd so much that the patch has to be plowed out and a new plantation started. But when that time comes, each clump is in a position to produce another crop while out of the ground, and if thrown out on top of the ground and left to itself it will continue to throw out shoots until it grows itself to death, using up all the energy that has been stored up in the roots. So in the fall we take a plow and go through our old plantations and plow out these clumps, leaving them on top of the ground until they freeze solid. Then we load them on wagons and take them to a dirt cellar or storehouse, or even to the dwelling cellar, and pack them closely together on the cellar floor. The temperature is kept at about 45 degrees, and in about six weeks these clumps will have started out a growth of stalks as large as those that would come if the clumps had remained in the field. By bringing these roots into the cellar at the proper time you can have a splendid crop growing all winter, which will readily sell in any market and fill out your all-the-year-round sales. *New York.*

An orderly New Jersey fruit and vegetable garden, arranged for horse culture so as to save hand labor

PRIZE LETTER

Conservation in Work

MRS. C. S. FERRILL

I BELIEVE the tendency with many farmers is to spread the garden out too much. The owner, under the impression that he has plenty of ground, devotes a large area to it. Often what is grown on half an acre might just as easily be grown on a fourth if we just stopped to think and plan a little bit and change our methods somewhat. As far as the saving of space is concerned, it may not be absolutely necessary, especially on large farms, to do so, but in these days of the high cost of living and scarce and high farm help it behooves every farmer to save labor as much as possible. One vegetable may often be followed by another in the same space and same season instead of having two spaces or a larger area devoted to the two vegetables. To illustrate what I mean: Last year a space was planned for late cabbage, and accordingly "left out" when planting was done. As the time for transplanting the cabbage drew near I found that I could pull and gather the early onions, and when we grew eight rows of onions I could set four rows of cabbage and plant two rows of late pole beans. The onions were constantly cultivated, so that the ground was in a loose, mellow condition and there were practically no weeds at harvesting time. It was far less work to prepare the ground here than it would have been to have done the same work in the idle space left for the cabbage. Cultivation was easier, also. There was little moisture in the idle ground, but cultivation in the onions was such that moisture was conserved rather than lost. Besides conservation of space, moisture and looseness of soil, the question of fertility, manuring, etc., comes in. The onions were heavily manured, but at the end of their growth it was found that the soil was yet rich in food elements from this same application. Had we left the ground idle, weeds would have stolen this fertility. As it was, the beans and cabbage got it, but had we planted them in the idle space, it would have been necessary to manure that too. See how we can save space, time, fertilizer, labor and energy by just using our brains a little! *Kentucky.*

PRIZE LETTER

Joy and Food from Garden

MRS. A. J. KAUFMAN

WE consider our half acre of vegetable and berry garden the most profitable half acre on our farm financially and in the pleasure we get out of it. The amount of green stuff one can raise in a small space hardly seems possible, providing one likes, or learns to like, that sort of work and does not let weeds and insects get the start.

From early spring until winter we hardly have a meal without crisp radishes, lettuce, onions, asparagus, cucumbers, green peas, etc., or of various salads with a combination of almost any of these, and desserts of big plates of strawberries, raspberries or blackberries. Then, the winter meals, with celery, endive, salsify, cabbage, etc., to say

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MARCH 1, 1920

Proof that they are Going

WE often hear about how people are leaving the farms, but seldom do we get comprehensive proof. It has remained for Prof. G. F. Warren, of Cornell, noted for his farm management investigations, and the New York field agent of the United States Bureau of Crop Estimates to obtain some reliable figures on this vital subject. These men ascertained the population on 3775 representative farms on February 1st a year ago, and compared it with the same farms on February 1st just passed. It was found that on these farms there were 4527 habitable houses, and that 10 per cent. of them, or 485, to be exact, were vacant. This was because during the past year the number of people on these farms decreased nearly 3 per cent. and the number of hired men decreased more than 17 per cent. Just why is too well known to everyone living in the country to need explanation. When 650 men and boys leave this comparatively small number of farms to take up some other kind of work, and only one-third as many, according to the figures obtained, return to the farm from other kinds of work, it becomes a serious problem as to where the help is coming from to grow the food needed. If the same ratio would hold good for all the farms in New York it would mean that approximately 35,000 men and boys gave up farming for something else, and only about 11,000 took it up. Can it be that the great appeal of modern conveniences had anything to do with this abnormal rush to get away? Out of the 3715 houses occupied by farm operators, only 20 per cent. had furnace heat, and 11 per cent. bathrooms, while 354 houses occupied by hired men reported only 6 per cent. with furnace heat and 5 per cent. with bathrooms. We must remember that most people when they get more money will first step into a higher plane of living and demand things they have formerly been denied. Maybe if some of these demands could be anticipated and satisfied there would be fewer people leave the farms.

Watch the Seed to Insure the Crop

SEEDTIME will soon be here, and a timely warning to test and clean seed may not be amiss. The old adage, "One year's seeding means seven years' weeding," has a good bit of truth in it, and we cannot be too careful regarding what we sow. When seed is high in price there is always the temptation to dilute it with older seed or neglect to take out all the impurities so that it can be sold cheap at a profit, but such seed is always dear to the purchaser. Most state departments of agriculture have facilities for testing seed sent to them, but it would be impractical for everyone to avail themselves of this way. The safest way is to buy only from reliable dealers, and then expect to pay market prices. A great deal of seed corn gathered last fall failed to dry out sufficiently before freezing weather came, and it will pay big to carefully test each ear before planting. The farmers in central and southeastern New York this spring are fortunate in having a "better seed special" come to them over the railroads from their state college at Cornell. Two cars have been fitted out by the specialists at the college with exhibits of corn, oats, barley, wheat, rye, beans, buckwheat, vetch, soy beans, potatoes, Canada peas, sunflowers, alfalfa and grass seeds. Stops will be made at various places during the month the train will travel around, and lectures will be given regarding the types and strains of these seeds and also the methods of controlling diseases which affect them. The lessons to be learned from an institute of this kind are far reaching, and it is hard to conceive of any farmer living in that territory who cannot be financially benefited by a visit to the train and an application to his own crops of the methods suggested.

Our Garden Special

THIS issue is another Garden Special, written by folks who do what they tell about. If it adds a bit of encouragement to try for a better garden on the farm this year, we and the writers will feel amply repaid. It seems queer, but it is true nevertheless, that we find too few good gardens on the general farms. By "good" we mean ones which last through the whole season and produce enough surplus to keep the family supplied with vegetables during the winter. Such a garden saves not only time and money, but adds to the health, and thereby the efficiency, of the household in a way which is often disregarded. When a field crop is sold, the farmer generally sees and handles the actual money he receives for it, and is apt to let this fact blind him to the return from a good garden, which is not expressed in dollars and cents when it becomes a part of the family's living. On the other hand, if a corresponding amount of produce must be bought from the green grocery store, it represents an actual money outlay, and under present prices mounts up quickly. Possibly one cause for the neglect of farm gardens is the amount of hand labor which is supposed to be attached to them. With modern horse-drawn garden tools it is now merely a matter of locating a new garden, or expanding the common small area surrounded by a picket fence, so that time and labor-saving methods can be adopted. Tending garden should not be merely another chore for the women folks, but should receive the share of attention from the men folks which its returns, compared with an equal area of farm crops, would warrant.

Counting the Horseless Wagons

ONCE before we remarked that we are living in the age of gasoline. We didn't know at that time, however, just how fast we were changing to the automobile and motor truck as our conveyances and burden bearers, but now one of the big rubber companies has counted them. Whereas twenty years ago a gasoline-propelled vehicle was looked upon as a curiosity, last year, 1919, there were over 7,555,000 automobiles and trucks registered in our forty-eight states. This does not count the motorcycles or dealers' registrations, but shows how the industry has jumped into the front ranks, and opens a field of almost limitless expansion. During 1918, according to the registrations in each state there were only a few more than 6,023,000 automobiles and trucks, so that the increase last year was 26 per cent. On the basis of these figures, the statisticians tell us that we can expect 10,000,000 cars next year, or one for every two families in the United States, if we allow five persons as the average family. Even as it is now, five states—New York with 600,000, Ohio with 511,500, Illinois with 478,450, California with 441,101, and Pennsylvania with 414,485, making a total of 2,445,536—have more automobiles and trucks than the entire continent of Europe and nearly one-third of all those in this country. Is it any wonder, then, that we hear so much about building good roads? There has never before been as much money spent at one time for highway construction as there is today, and nobody regrets it, if we get the roads.

Another National Farm Organization

THE American Farm Bureau Federation, "a farmers' piece of work, run by farmers for farmers," is now a going concern, and will have its first official meeting of directors and executive committee in Chicago, March 3d. Since the organization meeting last November nineteen states have ratified the constitution of the national organization and are each entitled to one regular voting delegate and an additional delegate for each 20,000 members or major portion thereof affiliated with the state federation of county farm bureaus. The states which have given their approval to the new national organization are Indiana, New York, Vermont, New Jersey, Georgia, West Virginia, Illinois, Iowa, Kentucky, Missouri, California, Colorado, Ohio, Nebraska, Wyoming, Minnesota, Louisiana, Michigan and Massachusetts. From this list it will be seen that all sections of the country are represented, so it cannot be said it is a regional movement, even if western enthusiasm and optimism played a large part in its start. The president of the American federation, James R. Howard, is actively organizing the work, and found time recently to go to Washington to take up the matter of car shortage with the officials of the United States Railroad Administration. The new secretary of agriculture, E. T. Meredith, would like the executive committee to have a conference with him in Washington so that he may obtain a first-hand understanding of the aims, objects and plans of the federation, so there is plenty of work ahead. Pennsylvania is missing among the pioneer states in this movement, because the local farm bureau organization is different from what it is in most states. In Pennsylvania every farmer in a county is considered a member of the farm bureau and has full rights to speak and vote in the regular meetings. There are no dues, as all expenses are met by federal, state, county or local funds, and the only mark of membership is the participation in the various activities of the farm bureau and the county agent. Members in some of the other states think that Pennsylvania farmers are making a mistake by being held out of this new movement, but it remains to be seen whether their judgment is better than that of the authorities who direct the extension work.

Bulletin Helps for Farmers

Gardeners, both commercial and home, will be interested in Farmers' Bulletin No. 1060, "Onion Diseases and Their Control." In twenty-three pages, aided with numerous illustrations, this bulletin covers onion growing conditions in the northeastern states, from Iowa to Massachusetts, although the recommendations apply in general to other sections.

"Judging Beef Cattle," Farmers' Bulletin No. 1068, is a clearly written and well-illustrated treatise of this prime essential for all those who have anything to do with this class of animals. Fat cattle, feeders and breeders are all carefully touched upon, as well as the carcass cuts. Boys training for stock-judging teams will find the bulletin of special value.

Either of the foregoing farmers' bulletins may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

PRIZE LETTER

Success With Cauliflower

MARY A. CROLL

We have been very successful in the raising of cauliflower, the aristocratic cousin of the cabbage family. And of the many kinds of vegetables given to man, I think the cauliflower, when properly grown and bleached, the most beautiful of all.

I have been told that fifty years ago it was supposed nothing but professional or experienced gardeners could raise the cauliflower, but we now find they are almost as easily raised as the humble cabbage. The first essential is the best seed that can be procured. We were penny wise and pound foolish, some years back, by buying what we thought cheap seed. The consequence was land wasted by the crop being a complete failure. But never again! The best is the cheapest always.

With us the seed should not be dropped later than May for the general fall crop (the spring crop is neither a success nor in great demand with us), and after the plants have reached a good size, transplant to their permanent rows. We have found giving each plant a sprinkling of hen manure at intervals, and hoeing it in around them, to be far superior to nitrate of soda. It not only starts them to rapid growth, but also starts the formation of heads. When the heads are as large as a tennis ball, we take the leaves and tie together over them, so as to protect from sun and rain, thereby bleaching them beautifully. The attention given at this time, and good seed, we have found to be the key to success for this desirable and profitable crop, as they bring anywhere from 15 cents to 50 cents per head right from the patch.

We think the very best time to sell is before heavy frost makes its appearance. A careless person will never market cauliflower with success, as they need very careful handling, bruising very easily and making a bad appearance, thereby hurting their sale.

Pennsylvania.

PRIZE LETTER

Peanuts for Everybody

G. FRANKLIN SMITH

Whether a garden or field crop, peanuts are easily grown, and with us are prized as highly as any garden delicacy. It is officially stated that there are but six varieties, and we have grown four or five of them, all good, but think the Valencia the best every way for the family, at least in Delaware. In the North the small Spanish can be grown, and, while small, it is of high quality and very productive. Here all varieties, seemingly, can be grown, but the Virginia types, including the Running Jumbo, seem not as productive nor as high quality as the Valencia. Moreover, the last seems to have fewer "pops" than the other large sorts. This has a small red kernel, from one to six in a pod.

We plant when ground becomes warm, about lima bean planting time, in marks made by the horse marker or furrows made by a hoe. The little Spanish need not be shelled; all others should be, but the skin or covering must not be broken. We drop them one every three to eight inches, covering about two inches with the foot. Rows are three feet apart. We sprinkle hydrated lime quite thickly over the row, either at once or before they come up. At times they appear very irregularly, but usually, unless destroyed by mice running along mole burrows, the ultimate stand will be nearly perfect. We cultivate with the horse, and hoe twice. They need not be banked up, nor blossoms covered with dirt, as supposed.

As the hay is highly nutritious and is relished by horses, cattle or rabbits, we pull before frost and stack around a pole, with nuts inside by the pole, tops out. We set three or more stakes in a row, with long poles, about fifteen inches above the ground, horizontally on each side as a foundation to keep mice out of the stacks and to give air beneath. After curing about four weeks we draw to shelter, and pull the nuts off at our leisure. If grown in very sandy soil, they will be bright and nearly clean. We roast in the kitchen stove oven. With some practice one soon learns to roast properly without burning.

The Virginia Experiment Station tells the writer they should be rotated with other crops. Theoretically, being a legume, they should be inoculated, but we have found no better results from inoculation either with cultures or soil. Very quickly the plants form nodules, and the roots are nearly covered with them. Hence, if roots could be left in the ground, they would be great soil builders. *Delaware.*

PRIZE LETTER

Extra Care with Tomatoes

J. M. GRAYBILL

Our tomatoes are always as early as any in this section, although we use a second early variety, the Globe, because we find its quality and flavor better than any other; and while my method may seem troublesome, it pays, because the same vines bear until killed by frost—bear very heavy crops, and occupy less ground, three dozen plants supplying a family of five for canning and all purposes, and all who eat of them pronounce them "the best ever."

About ten weeks before the last frost may be expected I sow the seed in fine, rich, light soil prepared the previous season and protected to be ready when wanted. This is packed in a shallow box, and boiling water poured over to saturate and warm it, also to destroy mold, etc. The soil should now be an inch lower than top of box. Sow seeds thinly, cover with fine soil, and cover the box with panes of glass. Keep warm and dark, watching for the sprouts. When they appear, place in a sunny window, and when the leaves touch the glass, remove it. Keep just moist enough to promote growth. Never let it dry out, nor the plants become chilled, nor growth checked. When the secondary leaves are the size of a grain of wheat, transplant to small pots (I use "baby size" milk cans, with a nail hole punched in the bottom and a bit of china over it) filled with the same sort of soil. When roots have filled these pots, transplant to larger ones (three-pound tomato cans are good), and as the plants grow, gradually harden them off by exposing to air and sun, but protect from wind and frost.

When the garden is ready I dig holes eighteen to twenty-four inches deep, as the subsoil is heavy clay, and almost fill with coarse manure, then with good soil and about a pint of hen manure. These holes with the manure retain moisture so the plants bear in spite of drought. When danger of frost is past, stir in a pint of wood ashes and about a tablespoonful each of air-slaked lime and commercial fertilizer for each plant, turn plants out of cans, set deep, water thoroughly, and level ground. I lose no plants, and do not check the growth. Cultivate, and keep on cultivating, regardless of weather or weeds, whenever the soil is in condition to stir. A garden rake several times a week works wonders for any vegetables I've tried it for.

Stake and prune each plant to one stem, tying to stakes as they grow, removing all branches when they start. When the first fruits are as large as a marble, apply nitrate of soda (about a spoonful for each plant), and repeat this in five or six weeks. *Virginia.*

A Garden and a Living

(Concluded from page 85)

many a big loss. It is in the form of a knapsack sprayer, and it sprays by means of compressed air. It is carried easily on the back, and cost $5 five years ago. It is a splendid machine, and is the quickest, easiest and cheapest way that we know of to dispose of the insects and diseases that sometimes bother our vegetables.

If we have a surplus of vegetables or berries, we pack them in an attractive package, stamp our name and address on the outside and take to town, where we can almost always get a top-notch price for them. However, we use part of our surplus in a way that gives our family much satisfaction in the winter. We have dried currants, green shelled peas and beans, green string beans, corn and pumpkins. A small drying rack was made that fits in the oven, and these were dried in it. The vegetables are gathered when fresh. They are then cleaned and placed on the trays in thin layers, and heated at a low, uniform temperature until completely dry. When dry they are placed in a cheesecloth bag, and then enclosed in a paper sack, which is tied tightly, and hung in a dry place. A number of vegetables are also canned by the "cold pack" method of canning. We have canned this way peas, snap beans, tomatoes, Swiss chard, cauliflower, corn, turnips, carrots, beets, cucumbers and spinach. We gathered the vegetables when fresh, blanched them in boiling water a few moments, then dipped in cold water, packed in cans, and heated for some time, the length of time, of course, depending on the vegetable.

Our celery is buried in a trench to blanch, and then removed from time to time when needed. We always leave most of the parsnips in the ground until spring, or soft spells of weather. Part of the carrots and cabbage are buried until spring, and part are kept in the cellar where we keep the turnips. Our garden is certainly appreciated in the winter just as much as in the summer, in fact, many times more so, because not a day passes but what we have one or more dishes that are from it. *Pennsylvania.*

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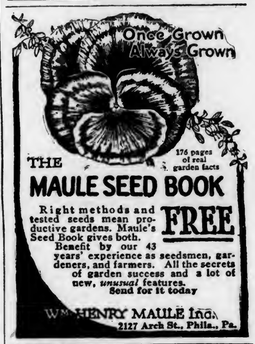

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PRIZE LETTER

Success with Lima Beans

G. FRANKLIN SMITH

Usually crops should be rotated, even in the garden. However, a few seem to do better grown repeatedly on the same ground. Lima beans are thus recommended, and our experience seems to prove the truth of the assertion. For four seasons, I think, we have planted the same spot, with increasing yields each year. Some may say this is due to inoculation being perfected, but it seems not to be true with other legumes, as crimson clover and peanuts.

We either broadcast or fill small furrows with manure—any kind but poultry manure, this being, we think, more nitrogenous than needed, hence wasteful of nitrogen—and plant when ground becomes warm. We like to make two plantings, as late in the summer the earlier planting may fail—but not always—while the second will remain green. The rows of pole limas we want five or six feet apart; the hills, three or four. We find that an early or summer cabbage plant set between each hill, even over the manure, thrives extra well and seems not to injure the beans. For this we plant the Volga or Early Stonehead.

Delaware.

PRIZE LETTER

The Importance of Good Seed

FRANK G. DAVIS

It has been our experience that one of the most important points in successful gardening is good seeds. The most foolish thing we ever did was to buy a bargain lot of seeds that were not worth the time it took to put them in the ground, not to mention our work in preparing the soil. The difference in the cost of poor seeds and the best on the market is so small that it is not worth thinking about.

We always found it the part of wisdom to buy our seeds as soon as possible and thus avoid disappointment in the supply running short. The farm papers are full of advertisements of reliable seedsmen, firms that have been represented in the advertising columns for years, and these are the men to deal with. They have reputations to sustain, and they see that the seeds they put out are thoroughly tested and will not be likely to disappoint gardeners. Our policy has been to save our own seeds when we struck a particularly good strain, and we have profited by that plan. *Virginia.*

PRIZE LETTER

Tramp! Tramp! Tramp!

MYRON C. SAFFORD

We will use these words from the old war song for our theme, for their use will mean much to the gardener. The right preparation of the soil when planting the crop or setting the plants is necessary for their success. After thoroughly loosening the ground by plowing (or spading), it must be thoroughly firmed after the seeds are sown or plants set. If not, it will dry out and plants fail to thrive. It must be firmed so there will not be any air spaces under the surface. Sod land must be thoroughly harrowed, or the furrows will not break down and form connection with the under soil.

In setting plants, much care should be used that all the hole is filled and firmly pressed against the roots. We recall a lady complained to a florist that all the plants that he had furnished her died except one that the gardener had stepped on accidentally. The late T. B. Terry stated once, in writing about sowing wheat, that he wanted it harrowed until a horse had stepped on every square foot of soil.

The old adage, "What is worth doing at all is worth doing well," is a good rule to follow. Tramp, tramp, back and forth, on the drill. Step on the side of the plant to firm the soil around it. Press on the top of every hill planted with the hoe, and the plants will come up much quicker and grow faster. [Caution must be sounded that if a clay soil is too wet it will pack and bake under the above treatment.—EDITOR.] *New York.*

Joy and Food from Garden

(Concluded from page 87)

nothing about all the canned vegetables and berries, certainly are, we think, palatable and wholesome; and I do not wish to boast, but we enjoy very good health.

We have our garden near the house, thereby giving it better and closer attention than if we had to walk a quarter of a mile to it. Each year we try to grow one or two new and curious things.

In preparing the soil we use well-rotted manure, thoroughly mixed with the soil by plowing and harrowing. Then we put on dry hen manure, mixed with loam, coal ashes or leaves, stirring it into the surface soil with a harrow. For our vegetables, which cover about a quarter acre, we use about thirty-seven pounds of nitrate of soda, scattered over the ground when the foliage of plants is dry, repeating the process at intervals of about two weeks. This has resulted in our neighbors asking us what new varieties of certain kinds of vegetables we grow in our garden, which are none other than the same they have in theirs, with only the difference in applying fertilizers.

We have a small hotbed and cold frame, where we grow our young plants, which are always hardier than those to be had from professional plant growers. *Pennsylvania.*

Grafting-Wax Formula

Grafting wax, which is needed by farmers and orchardists in spring time, may be made by the following formula, used at the Ohio Experiment Station:

Melt together until thoroughly mixed four pounds of resin, two pounds of beeswax and a pound of tallow. This mixture is then poured into a vessel of cold water. When the wax has cooled it is pulled like taffy until it becomes light and smooth. The hands should be greased with tallow for this operation. The wax may then be shaped into balls and sticks, and it will keep indefinitely in a cool place. Paraffin may be substituted for beeswax, as this substance makes a cheaper wax.

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PRIZE LETTER

Starting the Garden Right

E. M. WILLIS

Was your garden a failure last year? Did you work hard preparing the soil and planting the seed, and at last find your efforts all in vain? If so, perhaps it was the fault of the seed. Gardening is like a game, but much more fascinating than the best of them. It is really easy if you start right, but first of all you must have good seed. No gardener can be successful if the seeds he plants fail to grow or produce inferior plants.

We cannot have gardens unless the seed will grow; and must we get the soil in perfect order and not give a thought as to the kind of seed we are planting? A great many people become discouraged with their gardens because the seed did not come up good or because the plants failed to be true to name. Thus they do not take the real interest that is needed to make a success of gardening. We generally can succeed if we go at a thing with the determination to win, and we surely have a better chance of succeeding in gardening if we start out with the best seed obtainable. It may cost more than "bargain counter" seed, but is far cheaper in the end.

The war is over, but there are millions of people in the world today who are starving. Even *our* bodies need more vegetables than we generally give them, and we cannot afford to waste our money and land on poor, inferior seed. When we make our garden this year, let's have as our motto: "Only the best is good enough."

Maryland.

PRIZE LETTER

Preventing Rot of Cabbages

G. FRANKLIN SMITH

We think we have been successful in preventing the rots of the cabbage, as black rot, blackleg, stem rot, etc., by simply disinfecting the seed and planting in ground not recently used for this crop.

At any time previous to sowing this seed we make a solution of formalin, 40 per cent., obtained at drug stores, and water (formalin 1 fluid ounce, water 2 gallons; or, for small quantities, formalin 1 teaspoonful, water 1 teacupful), soak the seed twenty minutes, then rinse or wash in clear water, and dry. After this, sow whenever desired or keep until wanted, but place in a clean sack, not the one in which it came.

Seemingly this treatment should act as well for other members of the family—turnips, cauliflower, Chinese cabbage, etc. We have not tried it on these. *Delaware.*

PRIZE LETTER

Garden Greens

BELLE BARKER

When planning this year's garden do not forget to have a row each of spinach, Swiss chard and lettuce for greens. These grow so closely they do not require much weeding except between the rows. When cut off for use they will repeatedly grow up again until frosts.

Spinach especially, and also lettuce, is rich in iron and much better and cheaper than doctors' bills. Later in the season the stalks and midribs of the chard can be cooked the same as string beans. I have met a number of people who said they never thought of using lettuce for greens, but we like it as well as the others.

These three greens, besides having a pleasant flavor, are easily and quickly prepared for cooking, which means a good deal to a busy housewife. Swiss chard can be salted down for winter use, and is as delicious as when fresh. *New York.*

PRIZE LETTER

Humus for the Garden

MRS. C. S. FERRILL

While we generally manure the garden heavily and give it an abundance of fertilizer (and that is as we should), we often forget that it may need more humus—decaying vegetable matter. We rotate, turn under growing crops, etc., but do we do so for the garden? Often we take off all vegetable matter and leave or give little if any in return. I have in mind a family size garden in a small town. It is one of the most productive spots I have ever seen. I do not know what manures or fertilizers may have been applied to it, but I do know that the soil is very loose and mellow. I also know that every fall that garden receives a great, thick coat of dead leaves, raked up from two large lawns. The leaves are turned under to decay. They could be raked up and burned much easier, with less work and time, but the owners have learned their value in the garden, and so there they must go to do their bit. Ashes from the leaves burned would be worth far less to the garden than the leaves themselves, and would supply no humus whatever. Perhaps there is a lesson in this for some of us who are in the habit of burning or otherwise destroying leaves about the place, especially near the garden. *Kentucky.*

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Crop and Field Notes

A. E. GRANTHAM

A correspondent from Delaware writes: "Would like your opinion on these problems: First, I have several acres of grass land that has been cut over once during 1919, and the second growth let stand. As the season last year was favorable to the growth of a second crop, there is now on the ground a very good stand, consisting chiefly of timothy, with some Alsike clover and a little alfalfa. I propose to topdress this ground with about 250 pounds of commercial fertilizer per acre. Is it a good plan to use 100 pounds of nitrate of soda and 200 or 250 pounds of 16 per cent. acid phosphate per acre? Or has nitrate of soda a tendency to kill out the clover and increase the growth of timothy? What would you think of using 250 pounds of 16 per cent. acid phosphate and nothing else? Or would it be better to use a complete fertilizer in quantities up to 400 pounds per acre? Is sulphate of ammonia a good fertilizer for grass land? Is it better than nitrate of soda? My object is primarily to build up the soil, but would like to take one cutting of hay off the land. I wonder if this plan is better for the soil and for me than trying to grow so many acres of hoed crops, such as corn, tomatoes and potatoes?"

With a grass mixture such as you have it would be better to apply a fertilizer containing a high percentage of nitrogen and with a moderate amount of phosphoric acid and potash. The clover and alfalfa will benefit especially by the application of the potash. It is true that topdressing with nitrate of soda alone will stimulate the timothy so that the clover will be crowded out largely. Acid phosphate alone will not give a satisfactory increase in the growth of grass upon your type of soil. A complete fertilizer carrying about 6 to 7 per cent. nitrogen, 8 per cent. of phosphoric acid and 2 per cent. of potash would be very satisfactory in producing a heavy crop of grass and in developing a heavy root or sod growth which will be valuable in building up the soil. Sulphate of ammonia is nearly as good as nitrate of soda for topdressing grass, although it is about a week or ten days slower in acting than the nitrate. When applying the sulphate of ammonia this fact should be kept in mind and some allowance be made in the time of application.

With the present price of hay it is about as profitable to grow the crop, if the land is well adapted to it, as it is to grow corn or tomatoes. Grass responds as well to the application of the right kind of fertilizers as does any other crop.

The following inquiry was received concerning the use of fertilizers: "How would you use nitrate of soda on corn land that is sandy and low in humus? We used barnyard manure on one-half the corn last year, and nothing on the other half. We got good corn from the manured land, but shriveled grain and a soft cob where there was none. What is a good commercial fertilizer for corn? Is barnyard manure prohibitive at $5 per ton?"

On such land as you describe, nitrate of soda alone is not the best fertilizer for corn. Sandy soils low in humus require nitrogen in an organic form, such as tankage, blood or cottonseed meal. Get a commercial fertilizer analyzing 3 per cent. nitrogen, 8 per cent. phosphoric acid and 4 per cent. potash, and apply at the rate of 400 to 500 pounds per acre. This will be much cheaper than stable manure at $5 a ton—a price which is prohibitive for corn. Sow cover crops in your corn at the last cultivation and the humus content of the soil will be increased.

High-priced land is no longer confined to the North and West. The recent high prices for cotton and tobacco have greatly increased the selling price of land in the southern states. Cotton has been selling for $200 per bale of 500 pounds, while tobacco has ranged from 40 cents to $1 per pound. Some cotton growers get from a bale to a bale and a half per acre and from 1000 to 1500 pounds of tobacco per acre. Some tobacco growers received gross returns of $1000 per acre the past season. The South was never as prosperous as it is now. It is no wonder that land values are rising. Good cotton land in large tracts in South Carolina recently sold for $300 per acre. With the present price of cotton this land is cheap compared with Iowa and Illinois land, the producing power considered. One cotton grower who was recently interviewed stated that he netted $60 per acre over his entire farm, including both cultivated and uncultivated land. So great have been the profits from tobacco that sections of the South that have not been growing the crop recently are going in for tobacco this season. While the boll weevil has played havoc in some sections, the cotton crop is being supplanted by peanuts and tobacco. The peanut crop has been very profitable the past few years, and the acreage is extending for into new sections of South Carolina and Georgia.

Alfalfa is being seeded with good results in parts of Pennsylvania by sowing it along with wheat in the fall. The state experiment station has now under way several demonstrations in parts of this state showing the ease with which alfalfa can be grown by sowing it in the fall along with wheat. At first instance one would conclude that this would not be satisfactory, but some few farmers have been seeding in this way for several years, and are practically sure of getting a stand. Of course, the alfalfa is not quite as thick a stand as it would be seeded alone, but since the crop is kept on the land only one year, the method is worth while, since it saves a great deal of labor. Following wheat in this manner the alfalfa is rotated as red clover would be.

With the increased value of stable manure the farmer is interested in getting as good returns from it as possible, and he should take account of the fact that this product is not well balanced as a plant food. Ordinary manure contains 10 pounds of nitrogen, 5 pounds of phosphoric acid and 10 pounds of potash per ton. This shows that the product is low in phosphoric acid as compared with the other ingredients. For this reason, as experimenters have shown, it is well to apply to each ton of manure 25 to 40 pounds of acid phosphate, either before the manure is taken from the barn or during the time it is hauled to the field. This results in a better quality of crop, due to early maturity, and increases the returns from each ton of manure used.

The seed corn that was so carefully selected and stored during the fall should be given some attention during these winter days. The prevalence of mice and rats may destroy a large amount of it before attention is called to their depredations. It seems that these rodents are particularly aggressive this season, as many of the samples of corn exhibited at the Delaware State Corn Show had marks from these animals.

A subscriber asks for the best method of seeding a field of winter wheat to sweet clover. His soil is a sandy loam and of fair fertility. Experience has shown that sweet clover does well seeded quite early in the spring, before the frost has gone out of the ground. In this case it would be well to sow the seed in the latter part of February or early March, while the ground is still frozen. The thaw and the spring rains will cover the seed sufficiently so that when growing weather comes the germination will be prompt. Early seeding is desirable also from the standpoint of the hard seed, a large portion of which is found in the clover seed. In many cases sweet clover is seeded in an unhulled condition. The early seeding during the cold weather is especially advisable under such circumstances.

Sweet clover is being grown more generally than heretofore, but the practices as regards methods of seeding do not differ especially from those employed in the seeding of red clover.

The high price of red clover seed is not very encouraging to the farmer who has many acres to seed, and especially in view of the fact that it is more difficult now than ever before to secure a good stand. It goes without saying that the fertility of the land cannot be kept up without the use of legumes. Hence every precaution should be taken to secure a stand where high-priced seed is used.

By the use of a top-dressing of straw on the wheat, as described above, or a top-dressing of the wheat with a light coating of manure during the winter months, you will have one of the greatest aids that can be secured in getting a good stand of clover. If you have not tried this practice, topdress an acre or two this spring and note the results.

Although the area planted to winter wheat in the country as a whole is this fall 22 per cent. less than the area planted last year, the New York farmers reduced their plantings only 4 per cent., and on account of the relatively low prices being paid for rye and rye straw the area planted to that crop is 11 per cent. less than last year.

A square deal always pays.

PENNSYLVANIA FOR GRAIN DRILL SERVICE

Here is a compact outfit that sows all kinds of grain and fertilizer with minute accuracy. Quantities regulated by levers convenient to operator. Grass seeder either in front or behind openers, as desired. Low down construction throughout with hopper always in balance.

The Pennsylvania is built in sizes 8 to 12 tubes with choice of Pin Hoe, Spring Hoe or Single Disc openers. Special Drill Catalogue fully explaining efficient seeding mailed on request.

A. B. FARQUHAR CO., Ltd., Box 308, York, Pa.

Also Engines and Boilers, Sawmills, Threshers, Potato Diggers. Write for descriptions.

Positive Force Feeds
Chain Driven Insures
Accurate Seeding

GRASS SEED FREE SAMPLES Wonderful Value Wholesale Prices Highest Quality

Don't fail to investigate these bargains. Reclaned Tested Timothy $8.60 bu. Sweet Clover $8.40 bu. Alsike Clover and Timothy $8.20. bu. Sudan Grass 15c lb. Clover and other Grass & Field Seeds at low prices. All sold subject to State or Government Test under an absolute money-back guarantee. We are specialists in grass and field seeds. Located so as to save you money and give quick service. Send today for our money-saving Seed Guide which explains all, free. We expect higher prices—Buy now and save big money.

American Mutual Seed Co. Dept. 420 Chicago, Ill.

WITTE ENGINES Gasoline-Kerosene 2 to 20 H-P. Stationary and Portable, can now be ordered with

STANDARD BOSCH H. T. IGNITION

Write for latest Direct Factory Prices on all styles WITTE—with Bosch Standard Magneto—High Tension—the best Ignition for Kerosene. SAVE $15 TO $200 BUYING DIRECT. Catalog FREE.

Witte Engine Works 2549 Oakendale, Kansas City, Mo. 2549 Empire Bldg., Pittsburgh, Pa.

CLOVER SEED

We specialize in the best seed obtainable. Good seeds mean satisfied customers. When you buy our seeds you have the best that grows.

FREIGHT PAID. BAGS FREE

Our Clover, Alsike, Timothy, and other farm seeds are the most carefully selected. Quality is guaranteed. Rohrer's Seed Book and samples are free if you mention this paper.

P. L. ROHRER, Smoketown, Lancaster Co., Pa.

114 Acres, $2100 In Section of

High producing farms, on good road, 1½ miles to R.R. town, with stores, banks, milk station, canning factories, other advantages. Splendid machine-worked tillage, dark loamy soil, clay subsoil, large amount wood, timber, variety fruit. Comfortable 2-story house, barn, corn-crib, etc. Owner with other business sacrifices this farm at $2100. Easy terms. Details Catalog Bargains, 22 states, copy free. STROUT FARM AGENCY, 1422 E. H., Land Title Bldg., Phila.

Seed Corn 5,000 Bushels Extra selected, sure to grow. Leading varieties. Highest yielders. Best show corn. Also seed oats, barley, alfalfa, 1200 acres. Sample on request. Write for catalog. W. N. Scarff & Sons, New Carlisle, O.

SEED CORN Lancaster County Sure Crop. A tremendous yielder on good as well as poor soil. Long Champion Yellow Dent, the king of corns, has yielded 160 bushels of shelled corn to the acre. MADEIRA BROS., 1947 Swatara St., Harrisburg, Pa.

HAY AND POTATOES

Poultry and all produce wanted at market prices. Good, steady, active demand.

GIBBS & BRO., 323 N. Front St., Philadelphia.

FARMS and HOMES Where life is worth living. Moderate prices—genial climate—productive lands. For information write, STATE BOARD OF AGRICULTURE, Dover, Delaware

Keep Stepping

E. L. VINCENT

By cutting off the elderberry brush on an acre and a half of old pasture land, we were able to keep one more cow.

Clearing out the stones and brush which had been permitted to grow along an old board fence by the roadside gave us not less than half an acre more of land that could be tilled.

In the fall of the year we spent our odd days in the pasture, clearing up saplings and blackberry canes that had escaped the axe and scythe a good many years and which would, if they had been allowed to increase in size and stature much longer, have swamped all the grass. Our work gave us some good wood from the little trees, and at the same time made the feed better for the stock the year round. Every inch of ground is worth clearing.

Buying our gluten feed early we saved from five to ten dollars a ton. On ten tons this saving amounted to enough to buy a couple of good shotes. The money was well invested.

One day spent in finding a better market for fruit and vegetables netted us anywhere from one half to a dollar a trip.

The temptation to buy little things we do not really need, because they are cheap, is one that should be set down upon very vigorously. Not only will the saving in money be worth while, but we get better service out of the higher grade of things we buy.

Economy in keeping three horses busy enabled us to dispose of the fourth horse.

Changing work with a neighbor saves hiring an extra hand a good many days.

Small things these are, all of them, but "Mony a mickle maks a muckle."

New York.

New State Master for New York

Sherman J. Lowell, national master of the Grange, has been succeeded as master of the New York State Grange by W. N. Giles, former secretary and one of the older and stronger leaders of the Grange movement in the Empire state. As a member of the legislative committee for some years, Mr. Giles has acquired a broad grasp of legislative matters, and his years on a farm make him familiar with the real Grange spirit. National Master Lowell is to devote his time to National Grange work, including organization and development of the order in the less well organized states. His address will continue to be Fredonia, N. Y.

Death of William T. Creasy

William T. Creasy, for many years master of the Pennsylvania State Grange, and a nationally known advocate of farmers' rights, and foe of booze and political corruption, died at his home near Catawissa, Pa., on February 14th, at the age of 64 years.

Mr. Creasy served continuously in the house of representatives at Harrisbury from 1884 to 1910 as the Democratic member from Columbia county, and made an enviable record for himself. It has been said of him that more good laws were placed on the statute books through his efforts, and more vicious legislation killed through his voice and influence, than by any other member of the legislature in many years. He was known as an authority on taxation, and saved many thousands of dollars for property owners in the state by guarding their interests.

He was a large fruit raiser, and was president of the state horticultural society for several years. For a number of years he has represented the dairy interests at Washington, and was a consistent enemy of the oleomargarine interests.

He was familiarly known as "Farmer" Creasy, not in derision, but as a mark of endearment for what he did for agriculture. He is survived by his widow and five children.

Death of Mrs. McSparran

Mrs. John A. McSparran, wife of the master of the Pennsylvania State Grange, died February 22d in a hospital at Scranton, where she had undergone an operation. She took an active part in civic affairs of her community, and was deeply interested in Grange work. She was Miss Elizabeth Goodwin, daughter of Judge Goodwin, of Nottoway Courthouse, Va., and is survived by her husband and four small children.

Pennsylvania's corn crop for the year 1919 is valued at $107,693,265, and the hay crop at $107,417,523. In 1918 corn was valued at $103,469,892, and hay at $110,825,114.

Because sweet clover defies drought, this legume is regarded as one of the most satisfactory to grow for soil improvement purposes in Ohio.

Sweet clover is similar to alfalfa in the fact that it is a deep-rooted legume.

"For the Land's Sake use Bowker's Fertilizers. They enrich the earth and those who till it."—Adv.

Fertilize Corn for a Quick Start

AS SOON AS the young corn plant starts, the rootlets begin reaching out for plantfood. If they find it, in available form, the plant goes ahead, sturdy and green. If they don't find it, the green fades—you have often seen the sickly yellow color—and there will be no growth until a supply of available plantfood is found.

Nature provides ammonia in the vegetable matter of the soil. Warm weather brings decay, and this releases ammonia for the growing crop. But while waiting for warm weather corn should have ammonia supplied by fertilizer. You cannot afford to let the growing crop lose a single day.

Corn is a heavy feeder. It must have ammonia for a quick start and steady growth. It must have potash to make strong, stout stalks which bear big, heavy ears. It must have phosphoric acid to fill and harden those ears as well as to make strong and vigorous roots.

"High Analysis" Fertilizer for Corn

One of These Will Fit the Conditions on Your Farm

The figures represent percentages of ammonia, available phosphoric acid and potash, in the order given:

For sandy and loamy soils, and all worn soils, especially where the manure is short—
2-10-6 or **2-10-4** or **2-12-2**

For use on clay loams or other soils which contain plenty of potash—
2-12-0

For use where the soil has plenty of available ammonia; where plenty of manure is used; where legumes are plowed under—
0-10-8 or **0-12-4** — **0-12-2** or **0-16-0**

Our Automatic Formula Finder will help you select the right fertilizer to use on your other crops. Be sure to send for one—no charge or obligation.

Our booklet, "More Plantfood for More Corn," tells how to make bigger profits from your corn crop. Send for a copy. Also ask for our Automatic Formula Finder which will help you to select the right fertilizer for each crop. A post card request will bring both—they are free.

SOIL IMPROVEMENT COMMITTEE
of the National Fertilizer Association

CHICAGO
1731 Lumber Exchange Building

BALTIMORE
1031 Stock Exchange Building

Spring Clothes — Remarkable Variety — Surprising Values

For the entire family, everyday and Sunday—Clothes which enable you to make worth-while savings and obtain substantial quality

OFTEN it is very hard these days for small buyers to obtain at any price quality materials in sufficient quantity. Yet splendid quality prevails throughout the spring lines of Charles William New York Styles. In the big, new catalog are shown clothes for the entire family, not only for Sunday wear but for everyday use.

Tremendous purchases of entire factory outputs—contracts made months in advance—foresighted buying—only such efforts have made it possible for The Charles William Stores to gather a full supply of new goods. As a result The Charles William Stores presents—in spite of American and world market conditions—a larger showing of attractive, substantial values in clothes than ever before.

Here are included men's supplies, women's dresses, suits and accessories for rain or shine, boys' and girls' outfits for play or work, all ready today for prompt shipment.

The Charles William Store's guarantee protects you fully on every one of these products. Yet, because of our great facilities and because practically every article of merchandise comes to our stores direct from great factories, to be shipped direct to you, we are able to offer you substantial savings on everything purchased.

These rock-bottom prices which we are able to make in our Clothing Stores are reflected throughout the big Charles William Stores catalog. Look through it. You will find not only a great variety of clothes for the entire family but also household furnishings, farm implements, musical instruments, and other goods to satisfy nearly every human need.

New York spring and summer clothes at marked savings

IN spite of the fact that for a year market conditions have made it exceedingly difficult to purchase material of the first quality in sufficient quantity, our expert buyers have again stocked our Clothing Stores with dependable suits for Spring and Summer, for both men and boys.

Above, in the center (1), is illustrated the new belted model suit—*all wool*, which is available in a fine cheviot of olive green or brown shade. Our price, delivered free (4E 1613 olive, 4E 1614 brown), $33.75. It is shown with many other models on page 322 of our catalog. There is a profusion of other models shown on pages 316 to 324.

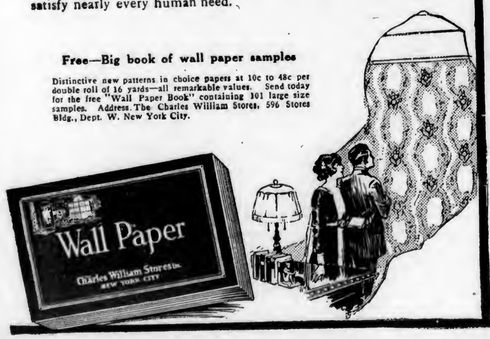
The popular New York double-breasted Palm Beach Cloth Suit for summer wear is at the left. Every suit is carefully tailored; the cut is unlined but is trimmed and finished with silk. The material is the genuine Palm Beach—half mohair, half cotton; light weight but durable, and holds its shape. The color is the popular tan shade of tan. It is shown with other models on pages 320 to 321 of the Charles William catalog. Our price (4E 1852), $8.50.

For rainy weather both quality and style are found in the wool-mixed cashmere Raincoat pictured above. Our price, delivered free (4E 1974), $14.50.

The boy's up-to-date suit (shown at the left) is washable. Yet, it retains its shape. It is made of good quality gray cotton crash, coat tailored with three patch pockets and removable belt. It is shown on page 336 of our catalog. Our price, delivered free (4E 674), $6.79.

Free—Big book of wall paper samples

Distinctive new patterns in choice papers at 10c to 48c per double roll of 16 yards—all remarkable values. Send today for the free "Wall Paper Book" containing 101 large size samples. Address The Charles William Stores, 596 Stores Bldg., Dept. W. New York City.



Complete outfits for men—for Sunday and everyday—for rain or shine

The Charles William Stores, full stocked with clothing accessories for men, make it possible for you to consult the catalog and satisfy every need at substantial reductions in price. Unusual values in these substantial lines are possible largely because of our location in the heart of the market—our nearness to importer and manufacturer—our ability to buy quickly and in quantity.

An example of good quality at a marked saving in this Madras dress shirt in coat style with soft French cuffs and cushion neckband. It comes in your choice of three colors—pink, lavender and green; launders nicely and holds its color. Our price, delivered free (3SE4322) $2.59. Other models and prices on page 364 of the Charles William catalog. Neckties and collars on pages 367-398.

Just when leather prices make quality and reasonable prices most difficult, we are able to offer these high quality dress Oxfords in the New York cap toe last, mahogany Calfskin and O'Sullivan Rubber Heels (7E2172) $8.69. Shown with other models, at various prices on page 290 of the Charles William catalog. Work shoes on pages 292 to 294.

Rubber boots at real savings! This boot has an extra heavy soled sole which adapts it to the roughest use. Heels are solid rubber. The sides are re-inforced. Our price, (7E1223) delivered free, $4.59. Other rubber footwear is shown on page 296 of the catalog.

Valuable 1920 Motor Car Supply book—Free

Everything your car needs, is shown in this book. Regent Super-Cord Tires, guaranteed for 10,000 miles—tools, lamps, spark plugs, jacks—accessories of all kinds, at prices lower than usual. Send for "Motor Car Supplies" today. The Charles William Stores, 596 Stores Bldg., Dept. M, New York City.

From snug little toques and tams to the lovely droopy picture hats. Pages 114 to 135.

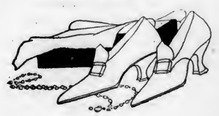
The new dresses are charming with their short sleeves and frilly apron tunics. Pages 4 to 39. Suits on pages 69 to 73

The proper shoes for every occasion on pages 265 to 306

1920 fashions are ready!

The new 1920 styles are fascinating. Do you need a smart suit, or one of the new coat dresses, a dainty Georgette blouse, gauntlet gloves, a beaded bag? Study our new catalog to find out just what you *do* need for this spring and summer. 200 pages of new styles for you to choose from!

And every detail is correct. From your jaunty straw tam to the tip of your Colonial pumps, you are wearing the styles that New York is wearing—a wonderful selection at unusually low prices. Write for your book today. Address The Charles William Stores, Inc., 596 Stores Bldg., Dept. F., New York City.



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Write to The Charles William Stores, 596 Stores Bldg., New York City.

The CHARLES WILLIAM STORES INC. — New York City

A Little Glimpse of German Conditions

R. W. BALDERSTON

The German government took over all good horses and auto trucks at the beginning of the war, and the present physical condition of farm stock and that seen on the city streets shows the strain. Only in rare cases do we see good young, well-fed horses of good size, and the only autos are a few worn-out taxis and occasionally a large truck that is owned by some special line of business that has money enough to buy one and is given a government license to use some of the very little gasoline that there is.

Pairs of small, chunky horses, apparently of Russian origin, pull many of the big drays formerly handled by one good German drafter. Old, worn-out plugs pull the most of the big coal and wood wagons, and there are many of them that would be out of service in normal times. All would be more able to work if they had more feed, as might be expected. The usual feed is mixed straw and oats, ground up together quite fine with some bran or other offal meal that cannot by any amount of ingenuity be converted into human food. I am told that the horses look far better than some months ago.

The streets are not in as bad condition as one would suppose, and I am amazed at the loads that are pulled by the little horses. One feature interesting to an American is the way that horses are harnessed here. Only brewery horses wear collars and hames; others have big breast straps for pulling. If hitched in pairs to a wagon, they wear another broad strap around the neck, to which is attached the tongue chain; often this has other side straps that connect with the saddle band and sometimes with breechings. It seems as if the horses pull just as much as with our big, expensive collars. The shafts of all wagons are fixed stiff as to height, like the poles, and consequently the horses need no saddles and tugs to carry the shafts.

The streets in Germany seem deserted after Philadelphia and New York. No traffic policemen are necessary for even the principal streets of the city, and we can cross anywhere any time. The only thing is that an auto is so unusual we may get run down because of failing to look out for them. The few trolleys stop at six o'clock P. M., so that everybody walks at night or else hires a ride in a hack at any price he can bargain for. If coal gets scarcer, the cars must stop entirely—and this is a city comparable to Boston or Baltimore, and before the war one of the great commercial centers of the world, with as full a harbor as there was anywhere to be found. It seems almost like living in "The Deserted Village."

"IN AS MUCH"

There is something almost unreal in walking the streets of Germany these days of 1920. The children—what few there are—do not play like normal children. They do not go to school this wintry weather, for there is no coal to heat the buildings. They wear wooden-soled shoes, so that they clatter as they run along. For coats they wear the poor cotton garments that have been all that could be obtained, or often a made-over German uniform—a "hand-me-down" from the soldier father. Caps are often, too, old army cast-offs. Gloves are not for them, except home-made mittens manufactured from old socks.

They pull heavy barrows about the streets, or carry home the family share of food for the week, exchanging for it the government bread cards, potato cards, meat cards or butter cards, as the case might be. If the government allowance does not suffice (and it is not a full allowance), they cannot expect more, for extras cost a small fortune in German money, being most often "profiteer" foods or else imported at great cost.

The bread that they eat is brown with the admixture of reground bran and coarse meals (we hear of sawdust, but I do not believe it), and this bread is city-baked, so that you get just your share, one loaf per person per week—a child could easily eat it all in three days. It is often sour, always heavy, and never spread with butter.

The city of Hamburg has one-sixth its normal milk supply, and babies get all the whole milk, except what is reserved for the sick. It is apportioned as follows (if the supply is here): Birth till 2 years, ¾ quart; 3 years till 4 years, ½ quart; 5 years till 6 years, ¼ quart. If supply is reduced, every allowance is reduced, and this is furnished only by a doctor's certificate. Butter and margarine allowances are very small. One-half pound of meat per person is the most that can be bought any one week. Many potatoes cannot be had, because transportation is so difficult with the coal shortage.

Everybody in the city seems to have a cold, for there is no coal—absolutely none for heating—and the wood is frightfully expensive. Peat is used some, but does not burn well in the usual stove. Nobody has any private autos, for there can not be any gasoline sold for them.

Mothers are wearing their last summer's thin shoes and clothes, and there are no rosy-cheeked Madonnas as in the old Germany. Truly the war has left a scar on the innocent child life of this stricken land, and all the world should join in endeavoring to help to heal it over as best we may. This is only Christian duty—nothing more. Regardless of our opinions in regard to the war or its causes or effects or who was responsible, we have a distinct service to the little ones who are now reaping the whirlwind. I never enjoyed myself more than in passing out emulsified milk to some kiddies whose pinched faces were wreathed in smiles as they endeavored to say "Thank you" in English.

Hamburg, January 23, 1920.

Said Farmer A to Farmer B: I want to handle my farm so that the fellow who comes after me won't have hard things to say about my kind of farming.

At the Ohio Experiment Station sweet clover has been found to have but one special soil requirement, that is, a sweet soil or one which has plenty of lime in it.

Great Opportunites in Canada's Maritime Provinces

—the historic scene of early settlement in what are now the Provinces of Nova Scotia, New Brunswick, and Prince Edward Island—may today be the land of opportunity for which you have been looking. Lying out into the Atlantic, close to the biggest markets in America, nearer to Europe than any port in the U.S. they

Offer Special Advantages to the Farmer

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FREE Puncture Proof TUBE
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UNION TIRES
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Akron Quality Tires
REDUCE TIRE COST 65%
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AKRON TIRE & RUBBER CO.

A Good Used Car
Come to the Roman
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30 Days Free Trial
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Save 25% on Roofing
CENTURY MFG. CO. 222 Metropolitan Bldg. E. St. Louis, Ill.

One Man Saws 25 Cords a Day

The Ottawa Log Saw does the work of ten men. Makes wood sawing easy and profitable. When not sawing wood use for pumping, feed grinding, etc. Simple economical durable. Thousands in use. Fully guaranteed, 30 days trial. Cash or Easy Payments. Write for Low Price. OTTAWA MFG. CO., 2361 Wood St., Ottawa, Kas.

Quality S. C. W. Leghorn Chicks from selected stock backed by over ten years careful breeding for high egg production. Chicks every week after March 1st. Helpful chick booklet free with every order. Circular and price list on request. BROOKSIDE POULTRY FARM E. C. Brown, Proprietor, Stockton, N. J.

Hummer's Famous Baby Chicks Ready for delivery March 15th, and each week. Barred Rock, R. I. Reds, S. C. Ancona, S. C. White Leghorn and S. C. Brown. Brooding Equipment, the kind that raises all of your chicks. Circulars free. Correspondence a pleasure. E. R. Hummer & Co., Frenchtown, N. J.

64 BREEDS Most Profitable pure-bred Northern raised Chickens, Ducks, Geese, Turkeys. Fowls, Eggs, Incubators all at low prices. 27th year. Largest plant. Large new Poultry Guide and Catalog FREE. R. F. NEUBERT Co., Box 841, Mankato, Minn

RAISE GEESE They are money makers for you. Large Toulouse, Africans, Brown Chinese. White Chinese. 100 selected Breeding Geese for sale Best quality. reasonable prices, buy now. Write, Chas. McClave, New London, O., Box 300.

White Rocks 11 snow-white 9½ lb. hens, finest type, laid 269 eggs in Jan. Male, 10 lbs., son of 1st Chicago cockerel. No finer breeders in Penna. Eggs limited. $5.00 per 15. J. NEVIN STROUP, Middleburg, Pa.

Hatching Eggs from quality bred-to-lay. 200-egg strain, Anconas, White Wyandottes, Partridge and Bar. Rocks, Buff Orpingtons, Indian Runner ducks, Toulouse geese. Bourbon Red turkeys. Mating list. Mrs. Guetter, R. 2, Media, Pa.

Tiffany's Superior Chicks That Live Wyandottes, Rocks, Reds, Leghorns Pekin, Rouen and Indian Runner Ducklings Aldham Poultry Farm, R. 3 C, Phoenixville, Pa.

200,000 CHICKS FOR 1920 Now is the time to place your order for spring chicks. Prices reasonable. Satisfaction and safe delivery guaranteed. Catalog free. KEYSTONE HATCHERY, Richfield, Pa.

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Poultry Pointers from Experience

H. E. ZECH

We keep poultry for egg production, and by increasing the yearly income from $128.19 to $3726.15 we have learned a few of the essentials to profitable poultry keeping. We keep a laying strain of the single-comb White Leghorn, not that other breeds do not lay as well, but because they suit our conditions and liking best. For success the selection of breeders comes first, and we must have health and vigor. We select ours in the fall, after the middle of October.

When the heavy layers, the late molters, shed their feathers, we aim to give them a rest, not from work, however, by taking away the dry mash hoppers containing a laying ration, and feeding only green vegetable food and scratch grains, with a short amount of moist mash every other day for some time; and when feathers are pretty well grown, work gradually back to a laying ration. In this way the birds will not be overfat, but will respond readily and will begin laying after a remarkably short rest.

We also find February-hatched pullets desirable breeders, and they should be given a rest as above, say during December. Use the most vigorous male birds from the highest producers you have or can afford to get.

The stove or colony brooder is a success. In cold weather we prefer a conical deflector, as this gives a much wider and larger chick-comfort zone. Do not be too kind and overheat in hot weather. We give plenty of ventilation, and have no bunching, but chicks keep spread out and thrive. Place low, thin roosts around the brooder at two weeks old. Chicks will fly on in the day and take to at night very much earlier than if delayed much longer. When on the roosts, much better ventilation can be given them, and all danger of possible crowding is overcome.

Feed sensible, not too much the first few days. Give all the exercise chicks can profitably take, and remember that leg weakness is more often caused by lack of exercise than anything else.

Grow stock on as much range as you can. A corn field alongside a meadow or grass field, or a grass sod orchard, is ideal.

We sell the cockerels at ten weeks, when they average about a pound and a half. We keep pullets growing, but do not force too fast, especially when the red begins to shoot, as too young laying is not conducive to success later on. If possible, move pullets to well-ventilated, well-lighted and clean laying houses before they begin to lay, and do not force the lay too much. Also, do not crowd. The more hens you have in it, the cleaner a house must be kept, and by all means do not be afraid of fresh air. We believe that nearly all colds come from breathing bad air. Green food and an abundance of clean water is essential. We find that both hens and chicks, if deprived of green vegetable food, will consume less mash and grow and lay much less.

A short cut in sprouting oats is to put a bucketful in a burlap bag, hang in a tub of water for twenty-four hours, and suspend a short time to drain. Wrapped up and placed where it will not freeze, it will heat itself, and must be watched and broken apart in the bag, and at times needs one more sprinkling to make it ready to feed in four to five days, when it can be taken in the bag to the hen houses.

It is very essential that biddy have a keen appetite. Try the following plan; it will do the trick: Come as near as possible to giving as much light, sunshine and pure air as all outdoors, an abundance of exercise, green food and clean water, also enough variety in the ration to meet the body's requirements, which must include, as a rule, at least 10 per cent. animal food. One hundred laying hens require in a year about the following feed: Two tons dry mash, about as many tons of grains, about one ton of mangel beets or other succulent vegetables, about 250 pounds oyster shell and grit. Something over a ton of straw is required for litter, and they will produce close to two tons of manure.

Feeding of Turkeys

FLORA M. TUCKER

Who shall decide where doctors (or turkey raisers) disagree? The answer seems to be, "Every man is a law unto himself," for there is wide divergence of opinion among turkey raisers. There is one law, however, seemingly universal: "Don't overfeed!"

Poults should not be fed until they are three days old. Give water in clean dishes. Many authorities favor a first week's feed of wheat bread squeezed dry out of sweet milk, combined with a dash of red pepper and hard-boiled egg crushed with the shell. Even this should be given sparingly and not too often. Don't feel you must gratify them just because they tease every time you go near them, but keep them warm, dry and quiet. Little turkeys, like human babies, like to sleep a good deal the first week.

After that time I agree with the turkey queen of New England that it is well to keep a specially prepared ground feed where they can help themselves. This sounds as if I were contradicting myself about not overfeeding, but the turkeys, young and old, do not seem to overeat of this dry mash, nor does it affect them as whole grain does. Poults need greens of some kind cut up fine in their food, either onion tops or lettuce. In some localities a plant called "nettles" grows, which is excellent for young turkeys, but I have not been able to make it grow in New Jersey, although the aforementioned turkey lady kindly sent me some roots.

Keep oyster shells and charcoal always accessible. Sifted coal ashes are also greatly relished. The bits of coal and clinkers are picked up greedily, often in preference to food. As the turkeys grow older, feed a little chick grain and, later, wheat; oats are fine, if one can get them clipped. When my turkeys are full grown I feed unclipped oats, as I cannot procure others. Sour milk is excellent for turkeys of all ages. Do not feed any corn to young turkeys, nor much to older stock, and never any that is not well seasoned.

New Jersey.

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The Worth of Public Farm Sales

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1288, APRIL 1.—What is the best way to start a strawberry bed so as to have plenty for home use and some to sell? What variety is best, how is the ground prepared and fertilized, how far apart are the plants set, and what care do they need the first year?

TOPIC No. 1289, APRIL 15.—What have you done to help the condition or improve the appearance of the public road which runs through the farm? Who keeps the road bushes cut in your locality, the supervisors or the owner of adjacent land? What about road shade trees? What is the best kind of road fence?

W. E. J., Pierpont, Ohio.—The farm equipment which we are using has largely been purchased at sales. We have found it profitable, and such machinery as we are using would cost upward of $2000, and this has largely been purchased for less than $1000. The harness, haying machinery and other tools have been purchased in this way. The exceptions are the mechanical milker, a second mowing machine and two gasoline engines, which were purchased new.

The writer has adhered to the principle of refusing to buy junk. There are sales which are promoted by farmers who have poor reputations for caring for tools and animals. Such men do not usually buy good tools, and the depreciation on them while in their hands is so great that of this class it is not profitable for the average farmer to buy to any extent. However, we bought a grain drill of a farmer of this kind, and it was one of our best purchases. The drill had stood out for two years, the owner had left phosphate in it, and at another time had attempted to use it as a lime spreader. This drill cost $33, and today would cost over $200. It required an expediture of about $10 and two days' time to put the drill in condition which has made it possible for us to get three years' first-class service, and we believe it is good for not less than ten years.

At another sale I secured a binder which had been used but two summers, had not been left out a dozen nights, and had not cut fifty acres. The canvas needed tacking to the strips. This binder cost $65. The original price was $125, and depreciation on it was less than $10, in my opinion. The same binder last year was selling for about $235. This machine has given us three years' service cutting grain on a 250-acre farm, and I would hesitate selling it for $175. These are only two examples of how it has paid the writer to attend sales.

It has been the writer's observation that a fall sale is a poor time to sell tools to be used late in the summer. Farmers are not greatly interested in hay loaders and binders in November and December, nor in dairy cattle in May or June, after they have settled down to the number of cows to keep for summer production. One should anticipate needs months in advance to buy profitably at sales. I have found that one should buy only machinery of late models, made by any of the nationally known concerns. One is in this way sure of repairs. In buying machinery I look for wear on parts where the most rapid motion occurs and on gearing. By looking over a machine one can conclude how much he can pay, and if the article goes higher, quitting is easier than earning cold cash. I would not buy a tractor at a sale or any machine with which I am not familiar, and I would advise no man to buy high-priced machinery at sales unless he has a natural mechanical bent.

J. N. G., Vicksburg, Pa.—For twenty-five years I have attended farm sales, first as a buyer, and of late years as a clerk. Not having enough money to buy new tools, harness and the best of stock when I began a quarter of a century ago to farm, I attended sales to buy some second-hand tools and harness, most of which I bought being worth the money. One set of harness which I bought then would sell for more money than I paid for it, and the same is true of a few other articles bought at sales in recent years, owing to the advance in price for tools and harness.

Frequently one can make a bargain at a farm sale by keeping on the watch and knowing the value of articles. But I have often seen men bid as much for implements and articles at sales as new ones could be bought for, either because they did not know the price of new articles or else the credit of ten or twelve months is an object to men who have but little capital with which to begin farming. The wide-awake bidder can often make bargains at sales if he knows values and does not allow himself to outbid the other fellow just for fun, as is often done.

It is not customary for the seller to provide a free lunch or dinner, but he feeds the auctioneers, clerks and a few friends whom he knows it is advisable to dine on that day. However, he welcomes hucksters who have stands where a lunch, oysters, coffee and candy are sold, giving them the use of sheds and suitable places to serve their trade, and in that way the public can get as much to eat as they wish for their money.

The terms of sale generally are a credit of eight or ten months, by giving a bankable note with approved security, or 2 or 3 per cent. off for cash. While a large part of the proceeds of the sale may be in the shape of notes, yet it is a rare thing for a note to be lost through failure to pay it when due or soon after. These sale notes are either discounted by banks, when one needs the cash, or they are placed in the bank on which the notes are made payable, for collection when due. Often the man who has the least is the first to pay his note. Banks are anxious to get sale notes to discount.

B. B., Tully, N. Y.—Last year our town had its first community auction, and plans are now under way for the second. No trash is taken, but all kinds of tools, stock, household goods, automobiles, etc., were sold. Everything is sold, nothing bid in. Anyone having anything he wishes to sell can have it listed and advertised. Last year the sale lasted all day. Probably in no other way could so many prospective buyers and sellers get together in one place. The Ladies' Aid of one of the churches served dinner and was well patronized. If the sale this year proves as successful as last, it will undoubtedly become an annual affair.

Of course, there are many individual sales besides. At some of these light lunches are served, but it is not customary. The majority of sales do not begin until after 12 o'clock.

C. S. D., Freedom, Pa.—We have always found it profitable to attend these sales in order to purchase some needed article. The last two we attended we feel safe in saying that we saved $75 on our purchases. We have seen other farmers pay more for articles than they were worth, just in order to get nine or ten months' credit. The better method is to always pay cash and get a discount. At most of the sales in this community a discount of 5 per cent. is allowed for cash.

The spring "farm community" sales are quite popular in this section, where farmers list their stuff they have for sale with a sales manager, who on an appointed day has the stuff disposed of at public outcry, at some central point in the locality, by an able, experienced auctioneer. At these sales farmers can secure needed articles, while other farmers can dispose of articles they don't need. In either case these sales are profitable for every farmer of the community to attend, as he is almost sure to either want to buy or sell something.

It is customary in this locality to provide a free lunch at the noon hour, consisting of hot coffee, bread and cheese or bun and meat sandwiches. These lunches are provided at all sales beginning before the noon hour, but none for afternoon sales.

Sale bills are printed and posted in public places for miles in all directions about two or three weeks prior to a sale date. These sales are always well attended, rain or shine, by farmers, who come for miles in automobiles, wagons, buggies, horseback, while others walk. The majority come for business, while a select few just come to see the crowd and to have a day off for a friendly chat with their neighbors. These sales are an established custom of this community, and many of them bring in large returns.

J. D., Meetze, Va.—The promiscuous attending of sales, just because they are neighborhood auctions, is a poor policy to pursue, as usually the farmer wastes his time as well as some of his money. On the other hand, the farmer who really needs a certain tool or machine, and knows of the condition and value of the article to be offered at a certain auction, sometimes is able to get a bargain. The experience of the writer has been that the most alluring bargains obtain at sheriff sales, where the goods must be sold to pay debts and where there is usually no "by bidding" in order to force up the prices.

As a rule, live stock brings about its true value at an auction, unless the crowd is small, as farmers generally are better informed regarding the value of farm animals than they are of implements and other accessories.

The writer once attended a sale where the owner spent several days painting all the tools and machinery. The result was that many of the implements which had been used from four to six years sold at almost the prices of new tools, just because they looked neat and attractive. Here is a good tip for the farmer who plans to hold a sale in the future. It will pay him to clean up and paint all his machinery and to procure and adjust all necessary repairs, as such labor and time pay handsome dividends when he comes to foot up his sales totals.

In my section the seller rarely provides a free lunch at noon, the custom being for neighbors or church or school societies to operate stands where coffee, sandwiches, cake and pie can be purchased. The writer once held a large auction, and violated local conditions by serving a warm lunch of coffee, sandwiches and hot "wienies." His experience was that the lunch returned big dividends, as a large crowd attended and bought freely and well. It does not cost a great deal to provide a couple of sandwiches and a cup of coffee for each one who attends the auction, and generally this expenditure pleases the crowd and increases the number and amount of the bids.

W. G. Y., Lexington, N. C.—I usually attend the farm sales that are held in our community, for several reasons, not that I always purchase any of the wares offered, but to see someone that is most sure to be there and to rub shoulders with my fellow men.

There seems to be a tendency of late years for some church or other society in the neighborhood of the sale to provide sandwiches for sale at a reasonable price, and to have fewer of the free lunches, except at the large sales, where the free lunch can not well be omitted. This usually is in some form of barbecue, and attracts lots of people. I have asked both the farmer and the auctioneer of these large sales if the free barbecue was a profitable expense in connection with the sale, and both parties say it is.

Our county agent usually attends the sales, when not conflicting with other engagements, and very often stages some special demonstration with crops, live stock or farm conveniences that is many times worth more than the day's time. At one of the sales last fall he staged a poultry-culling demonstration by using three hens especially selected for the purpose. I went home from the sale, and the following night went through our flock and divided it into two lots, according to the test given, and at the end of the second week the lot selected for egg production had laid over three times as many eggs as had the other lot, and the non-layer lot had in it the most chickens by two.

N. E. B., Conneautville, Pa.—My own experience through attending farm sales has never been of much gain. I have attended several, and have bought a number of head of stock and some machinery, but very little "junk." I find that what one doesn't need is dear at any price. I have neighbors, and I guess every community has individuals, who are anxious customers at the 5 and 10-cent row. Things are bought that are hardly worth carrying home and that will require storage where possibly some piece of machinery should be placed that is standing out.

Too many sales are killed at the beginning by the owner of the property engaging by-bidders—people posted who will bid on an article to a certain price, this price being its worth, if not more—and in order to get an article, you must exhaust the by-bidders.

Too many sales are offered to lessen the owner of some undesirable stock and his accumulation of so-called junk, having it understood that the pure-gold articles will be bid in and left on the job. This practice is hurting the public sales.

It is customary for the seller to provide a lunch or free dinner at his sale. In several cases the seller leaves the lunch in charge of the Grange, Ladies' Aid, Red Cross, etc. Thus he saves the little expense of a barrel of crackers and a pound or two of coffee. These societies charge a small fee, and by so doing make a nice little net profit. Sales without a lunch do not take well. The lunch is a good advertising card. Many a man's pocketbook is reached through his stomach.

Attending sales too frequently is of no profit; one's time at the spring of the year can be used to better advantage at home, though I believe the attending of a good sale—one carried on honestly and where good articles are sold—will keep one posted as to the prices of all farm stock and equipment.

H. B., York, Pa.—In this section the farm sales begin about February 1st and continue to about April 1st. I find several advantages in attending them. I usually know the good or bad qualities of my neighbor's cattle, horses, mules or machinery that he may offer for sale. The ten, eleven or twelve months' credit usually allowed is advantageous, as sometimes you can buy an article and use it for the given length of time, or sometimes can dispose of the same at a profit, before it needs to be paid for. I also go to other sales and buy articles needed, because some day I expect to sell out, and then I expect someone to buy my outfit. All the goods at farm sales are openly displayed for thorough inspection before the sale opens, which is usually at noon or 1 P. M. At a sale it is a pleasure to mingle with many of your friends and discuss many topics, such as crop rotation, fertilizers, labor, prices and other conditions.

The custom in this locality is to serve dinner free to all that wish to partake. This is supposed to be for the auctioneer, clerks and people coming from distant points, although there are some few individuals who make it a habit to follow sales for their meals. The meal usually consists of cold meats, cheese, rolls, pie, cake and coffee. Some also serve soup.

Sales as a rule are largely attended through this section by men, women and children, sometimes running up to a thousand or more.

The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

APRIL 1.—Spring housecleaning is about the order of the day, and we are wondering how we can improve the appearance of some of the rooms. Maybe you can tell us of some interesting interior decoration schemes which you have successfully executed.

APRIL 15.—A change of season always means a change of clothes for the family. In these days of expensive fabrics this means a good bit. Maybe your ingenuity has devised a way to save money on clothing, especially for the children. Tell us some of your methods, so we can all benefit by them.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Guineas in the Poultry Flock

E. O. J., Woodlawn, Md.—What an interesting theme! Guineas are the only 100 per cent. profit that has been realized on the farm, unless it was the boneset that I gathered near the ice pond and sold to the "herb woman."

The ones you raise with chicken hens are easily caught; those that the guinea hens rear in the open are wild, and refuse all cajolery and offers of friendliness. Having had guineas on the farm for several years, the writer feels she knows something about them.

When several hens are laying in the clover field or under a giant mullen, and you discover their nest with thirty-nine eggs in it, leave a dozen or fourteen there. That restores their confidence, or perhaps they cannot count a great number and do not know the nest has been disturbed. If only one egg should be left in the nest it is doubtful that the hens would lay there again. By care they will sometimes lay in the same bare spot among the potato vines or in a fence corner for four or five weeks, then, gypsy-like, they move away.

When a feather or two is seen in the nest, a hen is probably becoming broody. Now you feel very anxious that the little gray lady should set. She can rear them through violent storms as well as sunshine; she is a better mother than your chicken hen. So you are very wary, and you let the eggs collect, unless the number becomes too great, say more than thirty. It is gratifying to creep cautiously near at dusk, and there is the little Quaker fowl setting snugly. Your work is done. She sets, hatches and generally raises every little brown lady without your help.

Four guinea hens hatched good broods. Finally all the mothers and fathers and one hundred children roamed the fields together. Old farmers have told me it was the finest flock they ever saw. And these field-raised birds cost me nothing. They caught bugs, and ate weed seeds. They destroyed no truck, and "minded their manners."

Could they have been captured at the partridge size, one dollar apiece (alive) would have been received. A few weeks later some foolish ones strayed into a hen house. They were shut in, and ten were caught and dressed for sale. By "dressed" I mean picked, drawn, head and legs removed, washed thoroughly, wings and legs tucked in, and a bunch of parsley stuck in one wing. These brought $1.35 per fowl. We have eaten several, and I have sold more than seventy. There are about ten more to be disposed of, but the demand is for many.

Through the spring, summer and fall we use guinea eggs for table use. We put away many dozens in water glass, and have enough to last into April, when fresh eggs will be available.

Mrs. D. L. T., Fine Creek Mills, Va.—I've never raised guineas in large numbers for market, but I usually raise more than we need for home consumption, and I find it profitable to sell these. When they weigh about two pounds is the time to sell them. At this stage they bring, in our market, 80 cents apiece. I ship them alive, in the ordinary wire-covered coop, to our commission merchant to sell.

Guineas require careful attention until they are about six weeks old. After that, being fine foragers, they seem to be able to take care of themselves, except enough feed night and morning to keep them gentle. Considering the care and feed expended in raising them, they are more profitable than any fowl raised on the farm. My only reason for not raising more of them is that I'm too busy to find the nests and secure the eggs while fresh.

E. G., Buchanan, Va.—Guineas are not much trouble nor expense after the first two or three weeks of their lives, and are useful for destroying insects in orchard and garden, as they do not scratch. They have proved profitable by shipping alive to a large city hotel.

The hens lays between 10 A. M. and 3 P. M., and careful, unobtrusive observation is the best way to locate the nest. The birds are nervous and wild, and it is best to remove eggs from nest with a spoon. The hen will desert it if the hand touches the nest or *all* the eggs are removed.

The young are less wild when hatched under a chicken hen. Even then we find it necessary to surround the nest with a pen 6 feet by 8 feet of 12-inch boards, else the "keets" will run away and perish as soon as hatched. After the hatch the nest is replaced by a coop, and the brood kept confined till they learn the mother's call and become accustomed to their home.

We feed dry oatmeal and the cheaper grade of broken rice or "tailings," with plenty of fresh water and fine grit or sharp sand. Green feed is also necessary, and may be supplied by placing a block of fresh sod in pen each day, unless the pen is movable, which we find better. After the first week we feed wheat and cracked corn, but they soon learn to find their own living, and need little attention until the fall shipping season.

S. A., East Berlin, Pa.—Guinea raising is a profitable branch of poultry keeping, as with reasonable care they are easy to raise. After the first few weeks the young guineas take but little care, not as much feed as chickens, and do not damage any crops on the farm.

The guinea hens are left at liberty during the whole year, and they either go with the other chickens or take care of themselves. Two or three should be mated to each male. In the spring the hens go away and conceal their nests. They usually are not hard to find.

During the earlier part of the season the eggs should be taken from the guineas and hatched with hens. If care is used in removing them, it will not disturb the guineas from continuing to lay in the same nest for weeks. Later in the season each guinea should be allowed to hatch a reasonable number of eggs, which causes no trouble whatever to the busy country woman.

The guinea chicks must be raised separately from the chickens. For the first week they must be confined in a tight pen, or they will surely stray away from their foster mother and become lost. The hen must always be left out with the young guineas. When she is first left at liberty she should be trained a little so she will go out over the fields and not around the buildings. What little time this requires is profitably spent.

For the first few weeks the young guineas must be fed sparingly, or they will overeat and get indigestion. Any good feed that is satisfactory for baby chicks will be all right for young guineas. Finely cut lettuce leaves make very good green food, and the guinea chicks eat it readily, and it is wholesome for them. Green food adds the necessary bulk to their food without giving them too much nourishment.

In my community I do not consider it wise for a country woman to kill young guineas for market. It takes a lot of time and work, and there are always risks in shipping dead guineas to market. The local buyers take them at good prices, and I always sell mine to them as soon as they are large enough.

Mrs. A. J. K., Wellsboro, Pa.—While we have not made a specialty of raising guineas, we feel that as a side line, in combination with crops to which they do little damage, they prove a valuable feature.

Their shrill, harsh cries, uttered frequently, at all hours, is an undesirable quality which most people object to, but which we rather like, as in the day time they serve to frighten chicken hawks away, and at night they act as an almost unfailing barometer, almost always giving us warning of an approaching storm.

They have quarrelsome dispositions, which make them more or less objectionable among other poultry, especially young ones; but, living on a farm, we have had no trouble in that respect, as we keep their coops some distance from the chickens, and feed them apart, and, being of a roving nature, they very soon roam in opposite directions and much farther than the chickens.

They do steal some grain, berries, etc., but they also destroy many insects, and consume many weed seeds. Both old and young will obtain the greater part of their living by foraging, benefiting rather than injuring the farm crops.

Guinea meat is fine eating, although dark, and in the cities it is often served as game. Guineas need little fattening for market. As a rule the breast meat is heavy, and the flavor, if well cooked, is excellent.

We are fortunate in living near a neighbor who ships poultry to city trade, and in the fall we pack our few dozen guinea fowls along with his poultry, and the prices we get for them have been high, with the exception of two years during the war, which we laid to the fewer banquets, etc., where lavish expenditures were in disfavor.

The birds are killed by sticking in the mouth like fowl, and we ship them undrawn, with only the feathers removed. We pack them in a box or barrel lined with heavy paper, placing cracked ice in the bottom, then alternate layers of birds and ice, always finishing with ice.

We watch our guinea hens, and try always to hatch the first setting of eggs under hens, and let the guinea hens hatch any after that. The chicks or "peets" are very lively even when newly hatched.

At first we feed milk-soaked bread, oatmeal, canary seed and onions cut very fine; after that we feed the same as chickens.

Mrs. T. E. W., Jr., Wyoming, Del.—Raising guineas is not only quite profitable, but to me it is a very pleasant work. They are such pretty little things through the entire growing period! And how long they remember the mother who cared for them during their baby days! I have had a guinea, after she had laid and hatched little ones, follow the chicken hen that mothered her.

I like to let the chicken hens hatch and rear the little guineas, as they are not so wild. I put the hen in a nice light coop, and have a wire-covered run for the little guineas. The run must have no place where they can push their way out, as they are great little travelers, and you will likely not find them again once they get out.

Their food for the first week or two is a mixture of bread crumbs, cottage cheese and rolled oats. Feed along with this soaked millet seed, gradually giving the chick food or cracked grains.

After they can follow the hen nicely I let them run with her after the dew has dried from the grass.

I like to set the eggs as early as I find them, as the price of 1¼ to 1½-pound guineas is better early some years. This year the prices were best near Thanksgiving, but I think this year was an exception. During July and August the little guineas do not seem to live so well. We usually use the eggs found during this time for the table. In the early fall we allow the guinea hen to hide away her nest and later bring up a nice family of little brown birds to show us.

When sending to market dressed, as we formerly did, we stick through the mouth, the same as chickens, and pluck the feathers from the breast only, leaving all the others. We now crate and ship alive to Philadelphia, that market seeming to be the best.

Mrs. O. J., Rio, La.—A flock of guineas should be kept on every farm. They are ornamental, profitable, and useful to keep hawks, stray dogs and cats away from the poultry yards.

They require less feed than chickens, because they range more widely, gathering insects, waste grains, seeds and berries.

The guinea hen is a good layer, commencing when apple trees are in bloom and continuing till about frost, but inclined to be secretive during the nesting period, the nest being hard to find. All the hens are apt to lay together, and as they come off they give a series of loud, shrill cries, which are answered by the males. The hiding place can be located by this.

They are bad setters and poor mothers. If allowed to set, especially in the earlier part of the season, they are apt to forsake the nest in a few days and commence laying elsewhere. I prefer to hatch the eggs under common hens or in an incubator, and give the little guineas to hens to mother.

Only one male should be kept, as they are very combative. Six hens are enough for one male. I have kept ten, but many eggs would be infertile.

A little advertisement in our county paper brings buyers for all my surplus eggs and breeding stock. The cull birds are used at home or sold to our merchant, who ships them to the city, where I am told they are sent to fancy hotels and clubs, to be served as "baked grouse."

Homespun Yarn from Ithaca

Get more out of your home by making the house and its surroundings healthful, convenient, comfortable and attractive.

Cloths used for oiling floors or furniture should be kept in the open.

Dye Old, Faded Dress Material

"Diamond Dyes" Make Shabby Apparel Stylish and New—So Easy Too.

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package.

To match any material, have dealer show you *"Diamond Dye"* Color Card.

Fires may start from the spontaneous combustion of such cloths if they are kept in a closed receptacle.

"Laugh and grow fat" is a wise old saw. Fatigue and nervousness at meal times cause indigestion.

Cheap, nourishing and palatable is mush and milk, good for Sunday night or any other time.

Turkish towels not fit for service may be made into covers for hot water bags.

Wearing rubbers when it's that kind of weather saves shoe bills and doctor bills.

Remember those discarded silk dresses which are beyond making over as gowns? Think of them now as material for a petticoat, coat lining, a hang bag or, made up with discarded furs, as a neckpiece or muff.

That burned enamelware pan may still be useful. Place a small amount of fat in the pan, warm it gently, and scrape off the burned particles.

Tree those shoes! Keeping shoes on shoe trees when not in use adds weeks if not months to their life; and if heels are not built up as soon as they run over, the shoe soon loses shape.

Do you help your children's teacher
Upon her weary way?
Visit the school and know its tasks;
Don't put it off a day.

The women of New York were so much interested in "Civic Duties of Women" that the state college at Ithaca, N. Y., has had to issue another edition of the bulletin of that name. You can now have your copy. Ask for R. C. H. 120.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9565.—Ladies' waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. A narrow collar of satin follows the semi-surplice closing.

9562.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. A coat dress of splendid style boasts of broad revers and a panel front.

9567.—Ladies' and misses' middy blouse. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. The stitched yoke and deep band are attractive features of this new middy.

9550.—Child's coat. Cut in sizes 2, 4 and 6 years. The deep yoke drops into short panels at the sides, where tiny pockets are inserted for the sake of trimming.

9559.—Child's romper dress. Cut in sizes 2, 4 and 6 years. There is nothing more serviceable for play hours than a simple frock of percale or chambray with bloomers to match.

9549.—Men's and youths' dressing coat. Cut in sizes 16 years, and 36, 40, 44 and 48 inches. Patch pockets and a shawl collar of plaid are attractive and relieve the plainness.

9555.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. A simple gathered skirt with slot pockets for trimming is shown.

9563.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30, 32 and 34 inches waist measure. A fitted tunic drops over a two-piece foundation and falls in soft ripples at the lower edge.

9569.—Ladies' house dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. A surplice waist joins a gathered skirt, with attractively trimmed pockets, at the regulation waistline.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

SUNNY SLOPES

By Ethel Hueston

Copyright, 1917 The Bobbs-Merrill Company

Author of Prudence of the Parsonage, etc.

CHAPTER XI

THE OLD TEACHER

"Chicago, Illinois.

"Dear Carol and David:—

"It is most remarkable that you two can keep on laughing away out there by yourselves. It makes me think perhaps there is something fine in this being married business that sort of makes up for the rest of it. I think it must take an exceptionally good eyesight to discern sunshine on the slopes of sickness. If I were traveling that route, I am convinced I should find it led me through dark valleys and over stony pathways, with storm clouds and thunders and lightnings smashing all around my head.

"You admonished me to talk about myself and leave you alone. Well, I suppose you know more about yourselves than I could possibly tell you, and, since it is your own little baby sister, I am sure you are more than willing to turn your telescope away from the sunny slopes a while for a glimpse of my business dabbles.

"This is Chicago.

"Aunt Grace was rendered more speechless than ever when I announced my intention of coming, and Prudence was shocked. But father and I talked it over, and he looked at me in that funny, searching way he has, and then said:

"'Good for you, Connie; you have the right idea. Chicago isn't big enough to swallow you, but it won't take you long to eat Chicago bodily. Of course you ought to go.'

"I know it is not safe to praise men too highly, they are so easily convinced of their astounding virtues, but that time I couldn't resist shaking hands with father, and I said, and meant it:

"'Father, you are the only one in the world. I don't believe even the Lord could make your duplicate.'

"Mr. Nesbitt was very angry because I left them. He said that after he took me, a stupid little country ignoramus, and made something out of me, my desertion was nothing short of rank ingratitude and religious hypocrisy and treason to the land of my birth. One might have inferred that he picked me out of the gutter, brushed the dirt off, smoothed my ragged looks, and seated me royally in his stenographic chair, and made a business lady out of me. But it didn't work.

"I came.

"Mr. Baker, the minister there, is back of it. He met me on the street one day.

"'I hear you are literary,' he said.

"'Well, I think I can write,' I answered modestly.

"Then he said he had a third-half-nephew by marriage, to whom, ground under the heel of financial incompetency, he had once loaned the startling sum of fifty dollars—I say startling, because it startled me to know a preacher ever had that much ready cash ahead of his grocery bill. Anyhow, the third-half-nephew, with the fifty dollars as a nucleus—I think Providence must have multiplied it a little, for our fifty dollars never accomplished miracles like that—but with that fifty dollars as a starter he did a little plunging for himself, and is now owner and editor of a great publishing house in Chicago.

"And Mr. Baker, the old minister, kept him going and coming, you might say, by sending him, at frequent intervals, bright and budding lights with which to illuminate his publications. It seems the third-half-nephew by marriage, in gratitude for the fifty dollars, never refused a position to any satellite his uncle chose to recommend. And Mr. Baker glowed with delight that he had been able, from the unliterary center of Centerville, to send so many candles to shine in the chandelier of Chicago.

"All I had to do was to come.

"As I said before, I came.

"I went out to Mrs. Holly's, on Prairie avenue, and the next morning set out for the Carver Publishing Company, and found it, with the assistance of most of the policemen and street car conductors, as well as a large number of ordinary pedestrians encountered between Prairie on the South Side and Wilson avenue on the north. I asked for Mr. Carver, and handed him Mr. Baker's letter. He shook hands with me in a melancholy way, and said:

"'When do you want to begin? Where do you live?'

"'Tomorrow. I have a room out on the South Side, but I will move over here to be nearer the office.'

"'Hum—you'd better wait a while.'

"'Isn't it a permanent position?' I asked suspiciously.

"'Oh, yes, the position is permanent, but *you* may not be.'

"'Mr. Baker assured me——'

"'Oh, sure, he's right. You've got the job. But so far, he has only sent me nineteen, and the best of them lasted just fourteen days.'

"'Then you are already counting on firing me before the end of two weeks,' I said indignantly.

"'No. I am not counting on it, but I am prepared for the worst.'

"'What is the job? What am I supposed to do?'

"'You must study our publications, and do a little stenographic work, and read manuscripts and reject the bum ones—which is an endless task—and accept the fairly decent ones—which takes about five minutes a week—and read exchanges and clip shorts for filling, and write squibs of a spicy nature, and do various and sundry other things, and you haven't the slightest idea how to start.'

"'No, I haven't, but you get me started, and I'll keep going all right.'

"The next morning he asked how long it took me to get to the office from Prairie, and I said:

"'I moved last night. I have a room down on Diversey Boulevard now.'

"He looked me over thoughtfully. Then he said: 'You ought to be a poet.'

"'Why? I haven't any poetic ability that I know of.'

"'Probably not, but you can get along without that. What a poet needs first of all is nerve.'

"I didn't think of anything apt to say in return, so I got to work. Day after day he tried me out on something new, and watched me when he thought I didn't notice, and went over my work very carefully. One morning he asked me to write five hundred words on 'The First Job in a Big City,' bringing out a country aspirant's sensations on the occasion of his first interview with a prospective employer.

"I still felt so strongly about his insolent assurance that I couldn't hold down his little old job, that I had no trouble at all with the assignment. He read it slowly, and made no comment, but he gave it a place in the current issue. And then came a blessed day when he said: 'Well, you are on for good, Miss Starr. I now believe in the scriptural injunction about seventy times seven, and a kind Providence cut the margin down for me. I forgive Uncle Baker for the nineteen atrocities at last.'

"I was very happy about it, for I do love the work, and the others in the office are splendid, so keen and clever, and Mr. Carver is really wonderful. We are not a large concern, and we have to lend a hand wherever hands are needed. So I am getting five times my fifteen dollars a week in experience, and I am singing inside every minute, I feel so good about everything. The workers are all efficient and enthusiastic, and we are great friends. We gossip affectionately about whoever is absent, and hold a jubilee at the restaurant downstairs when anyone gets ahead with an extra story. No other publishers have come rapping at my door in a mad attempt to steal me away from Mr. Carver. I have no bulky mail soliciting stories from my facile pen. But I am making good with Mr. Carver, and that's the thing right now.

"Have I fallen in love yet? Carol, dear, I always understood that when folks get married they lose their sentimentality. Are you the proving exception? My acquaintance with Chicago masculinity is confined to the office, the Methodist Church and the boarding-house. The office force is all married but the office boy. The Methodist congregation is composed of women, callow youths and bald heads of families. Women are counted out, of necessity. I am beyond callow youths, and not advanced to heads of families. Why, I haven't a chance to fall in love—worse luck, too, for I need the experience in my business.

"At the boarding-house I do have a little excitement now and then. The second night after my installation a man walked into my room without knocking—that is, he opened the door.

"'Gee, the old lady wasn't bluffing,' he said in a tone of surprise.

"It was early in the evening, and he was properly dressed and looked harmless, so I wasn't frightened.

"'Good evening,' I said in my reserved way.

"'Gave you my room, did she?' he asked.

"'She gave me this one—for a consideration.'

"'Yes, it is mine,' he said sadly. 'She has threatened to do it, lo, these many years, but I never believed she would. Faith in fickle human nature—ah, how futile.'

"'Yes?'

"'Yes. You see, now and then I go off with the boys, and spend my money instead of paying my board, and when I come back I expect my room to be awaiting me. It always has been. The old lady said she would rent it the next time, but she had said it so many times! Well, well, well! Broke, too! It is a sad world, isn't it? Did you ever pray for death?'

"'No, I did not. And if you will excuse me, I think perhaps you had better fight it out with the landlady. I have paid a month's rent in advance.'

"'A month's rent!' He advanced and shook hands with me warmly before I knew what he was doing. 'A month in advance! It is an honor to touch your hand. Alas, how many moons have waned since I came in personal contact with one who could pay a month in advance!'

"'The landlady——'

"'Oh, I am going. No room is big enough for two. Lots of fellows room together to save money, but it is too multum in too parvum; I think I prefer to spend the money. I have never resorted to it even in my brokest days. I didn't leave my pipe here, did I?'

"'I haven't seen it,' I said very coldly.

"'Well, all right. Don't get cross about it. Out into the dark and cold, out into the wintry night, without a cent to have and hold, but landladies are always right.'

"He smiled appealingly, but I frowned at him with my most ministerial air.

"'I am a poet,' he said apologetically. 'I can't help going off like that. It isn't a mental aberration. I do it for a living.'

"I had nothing to say.

"'My card.' He handed it to me with a flourish, a neatly engraved one, with the word 'advertisement' in the corner. I should have haughtily spurned it, but I was too curious to know his name. It was William Canfield Brewer.

"'Well, good night. May your sleep be undisturbed by my ghost stalking solitary through your slumbers. May no fumes from my pipe interfere with the violet de parme you represent. If you want any advertising done, just call on me, William Canfield Brewer. I write poetry, draw pictures, make up stories, and prove to the absolute satisfaction of the most skeptical public that any article is even better than you say it is. I command a princely salary—but I can't command it long enough. Adieu, I go, my lady, fare thee well.'

"'Good night.'

"I could hardly wait for breakfast, I was so anxious to ask about him. I gleaned the following facts: The landlady had packed his belongings in an old closet and rented me the room in his absence, as he surmised. He is a darling old idiot who would rather buy the chauffeur a cigar than pay for his board. He says it is less grubby. He is too good a fellow to make both ends meet. He is too devoted to his friends to neglect them for business. He can write the best ads in Chicago and get the most money for it; but he can't afford the time. Mrs. Gaylord is a stingy old cat; she always gets her money if she waits long enough, and he pays three times as much as anything is worth when he does pay. Mrs. Gaylord's niece is infatuated with him, without reciprocation, and Mrs. Gaylord wanted her, the niece, to stick to the grocer's son; she says there is more money in being advertised than advertising others. Wouldn't Prudence faint if she could hear this gossip? Don't tell her—and I wouldn't repeat it for the world.

"I hoped he would come back for another room—there is lots of experience in him, I am sure, but he sent for his things. So that is over. I found his pipe. And I am keeping it so if he gets smokey and comes back he may have it.

"Oh, I tell you, Carol, Experience may teach in a very expensive school, but she makes the lessons so interesting it is really worth the price.

"Lots of love to you both.

"From
"CONNIE."

CHAPTER XII

THE LAND O' LUNGERS

"Is Mrs. Duke in?"

David looked up quickly as the door opened. He saw a fair, petulant face, with pouting lips, with discontent in the dark eyes. He did not know that face. Yet this girl had not the studied cheerfulness of manner that marks church callers at sanatoriums. She did not look sick, only cross. Oh, it was the new girl, of course. Carol had said she was coming. And she was not really sick, just threatened.

"Mrs. Duke is over at the main building, but will be back very soon. Will you come in and wait?"

She came in without speaking, pulled a chair from the corner of the porch, and flounced down among the cushions. David could not restrain a smile. She looked so babishly young and so furiously cross. To David, youth and crossness were incongruous.

"I am Nancy Tucker," said the girl at last.

"And I am Mr. Duke, as you probably surmise from seeing me on Mrs. Duke's porch. She will be back directly. I hope you are not in a hurry."

"Hurry! What's the use of hurrying? I am twenty years old. I've got a whole lifetime to do nothing in, haven't I?"

"You've got a lifetime ahead of you all right, but whether you are going to do nothing or not depends largely on you."

"It doesn't depend on me at all. It depends on God, and He said: 'Nothing doing. Just get out and rust the rest of your life. We don't need you.'"

"That does not sound like God," said David quietly.

"Well, He gave me the bugs, didn't He?"

"Oh, the bugs—you've got them, have you? You don't look like it. I didn't know it was your health. I thought maybe it was just your disposition."

David smiled winningly as he spoke, and the smile took the sting from the words.

"The bugs are worse on the disposition than they are on the lungs, aren't they?"

"Well, it depends. Carol says they haven't hit mine yet." He lifted his head with boyish pride. "She ought to know. So I don't argue with her. I am willing to take her word for it."

Nancy smiled a little, a transforming smile that swept the discontent from her face and made her nearly beautiful. But it only lasted a moment.

"Oh, go on and smile. It did me good. You can't imagine how much better I felt directly."

"There's nothing to make me smile," cried Nancy hotly.

"You may smile at me," cried Carol gaily as she ran in. "How do you do? You are Miss Tucker, aren't you? They were telling me about you at the office."

"Yes, I am Miss Tucker. Are you Mrs. Duke? You look too young for a minister's wife."

"Yes, I am Mrs. Duke, and I am not a bit too young."

"I asked them if I should call a doctor, and they said that could wait a while. First of all, they said, I must come to Room 6 and meet the Dukes."

Carol looked puzzled. "They didn't tell me that. What did they want us to do to you?"

"I don't know. I just said, 'Well, I guess I'd better get a doctor to come and kill me off,' and they said, 'You go over to No. 6 and meet the Dukes.'"

"They said lovely things about you," Carol told her, smiling. "And they say you will be well in a few months—that you haven't T. B.'s at all yet, just premonitions."

The good news brought no answering light to the girl's face.

"They are nurses. You can't believe a word they say. It is their business to build up false hopes."

"When anyone tells me David is worse, I think, 'That is a wicked story,' but when anyone says, 'He is better,' I am ready to fall on my knees and salute them as messengers from Heaven," said Carol.

One of the sudden dark clouds passed quickly overhead, obscuring the glare of the sunshine, darkening the yellow sand.

"I hate this country," said Nancy Tucker. "I hate that yellow hot sand, and the yellow hot sun, and the lights and shadows on the mountains. I hate the mountains most of all. They look so abominably cocksure, so crowy, standing off there and glaring down on us as if they were laughing at our silly little fight for health."

(Continued on page 103)

DURABLE
DURHAM HOSIERY

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A very fine mercerized stocking, fashioned with seam back. Black, white, gray, cordovan

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A Concrete Floor in the Cow Barn

H. COLIN CAMPBELL

In modern barn construction, sanitation is one of the first things that is looked for. This is particularly true in the dairy barn, because milk and other dairy products readily absorb objectionable odors and flavors. Sanitation is essential in any cow barn, however, for the health of the stock. Even beef cattle cannot be produced with most success unless the barn construction permits regular cleaning and disinfecting and provides the best conditions for maintaining sanitation. The sanitary qualities of concrete are recognized by everyone, and it has come to be the favorite material for barn floor construction. A concrete floor, because of its smooth, hard surface, is easy to keep clean and disinfect. It contains no cracks to afford breeding places for bacteria which are a menace to the health of the animals. It is impervious to rats and other small animals which act as carriers of disease, and it does not absorb liquids nor odors.

In addition to being sanitary, concrete is permanent, requires practically no maintenance, and will not rot. Dryness, another essential feature, is also provided by a concrete floor. Since it is built directly on the ground, no draughts can pass under it and up through the cracks, as is often the case with wooden floors. All nails, slivers and other projections which may cause injury to the cattle are eliminated. One of the biggest advantages of concrete is its fire-proofness, and if the walls and ceiling are made of concrete, as well as the floor, the stock will be protected against any fire which may originate in the upper part of the barn.

In building a new barn a concrete floor is the only type that should be considered, because the owner can be sure that it will last as long as the rest of the barn and will not have to be replaced. It is also the best kind to use for replacing a floor in an old barn, because it is so conveniently built. It can be constructed in any season and in any kind of weather, even in winter, although then artificial heat must be supplied to prevent freezing of the concrete before it has properly hardened. No highly skilled labor is required for its construction, and it can be laid by the farmer and his hired help at any convenient time. The only precautions necessary are to see that the concrete is properly proportioned, placed and protected while hardening.

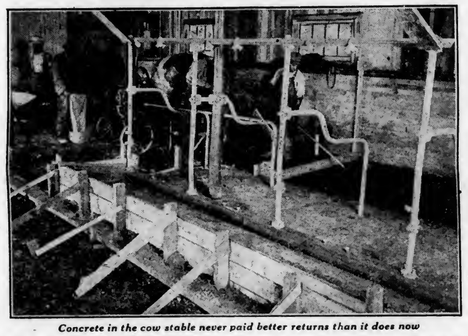
The feed alley should be at least 5 feet wide, and when the animals face toward the middle, with a double feed alley between them, it should be 8 feet wide. The mangers may be either of concrete or of metal, but concrete is preferable because of its freedom from rust. Drains should be provided in the mangers to carry off the water which is used in washing them. Stalls are usually made 4 feet 8 inches long, but this length will vary, depending on the size of the cows. The stalls should be at least 3 feet 6 inches wide. The gutter should be 8 inches below the surface of the stall and 6 inches below the manure alley. It should be 16 to 18 inches wide, so it can be cleaned out with an ordinary scoop shovel. The manure alley should be at least 8 feet wide.

Forms will be required for different parts of the floor, such as the mangers and gutters, and the forms should be tight and well braced. If the form boards have been used before, the old concrete should be thoroughly scraped off before using them. It is always well to oil them to prevent warping and to keep the concrete from sticking to them. Before placing the forms, a good, firm sub-grade must be secured. If the ground has a tendency to hold water, tile drains should be laid, and if the soil is loose it should be compacted by rolling or tamping. In some cases it may be necessary to lay a sub-base of gravel or cinders in order to make drainage easier. If this is done, the material used in the sub-base should also be thoroughly compacted before the concrete is laid. The floor should be made at least 5 inches thick, and if the alley is to be used as a driveway, 6 or 7 inches should be the thickness.

Some farmers will be able to secure the sand and pebbles at home and thus save considerable money. Ordinary gravel as it comes from the pit should not be used, however, without first screening and grading it and remixing the graded aggregates in the proper proportions. The sand should be fine enough to pass through a ¼-inch screen. The pebbles should range in size from ¼ inch up to 1½ or 2 inches. A 1-2-3 mixture should be used to make the floor completely water-tight, that is, 1 sack of Portland cement, 2 cubic feet of sand and 3 cubic feet of pebbles or broken stone. Expansion joints are unecessary, but, since the entire floor cannot be laid in one operation, joints are usually made at the places where each day's work is completed. If the stanchions and other equipment are not already installed, some preparation must be made for attaching them later. The floor should slope in both directions toward the gutter, and the proper slope can be secured by the use of a template or strike-board. It should be finished with a wood float, which will leave the surface gritty and keep the animals from slipping. The only exceptions to this are the gutter and the mangers, which should be troweled smooth to facilitate thorough cleaning.

The accompanying illustration shows a concrete floor under construction in a beef cattle barn on an Ohio farm. It shows the concrete just as it has been struck off preparatory to finishing the surface. Just under the handle of the rake in the man's hand is a simple template to secure the proper slope. The large amount of coarse aggregate which appears on the surface is easily covered in the process of finishing. The method of staking and bracing the forms is also clearly shown. In this barn the stall equipment was placed before the form was laid, and this method has been found more convenient in most cases than installing it later.

If the work is done in cold weather the aggregates and the water should be heated before mixing, and after the concrete is placed it should be covered with canvas or some other material to prevent the escape of heat. If the weather is extremely cold it may be necessary to heat the barn with a small oil-burning heater. In warm weather the concrete should be kept moist with a few inches of damp sand, sawdust or some such material as soon as it has begun to harden. This covering should be kept wet by sprinkling it frequently. In warm weather the floor can be used in about ten days, but in cold weather it will harden more slowly, and should not be used for at least two weeks. Wagons should not be driven over it for three or four weeks.



Concrete in the cow stable never paid better returns than it does now

The arrangement of the barn will depend to a large extent on the individual preference of the owner. If the cows face in, feeding is made easier, and the cows are not required to face the bright light coming in at the windows. On the other hand, if the cows face toward the wall, less labor is required in cleaning the barn, and milking operations are much simplified, particularly if a milking machine is used. Windows should be so arranged as to admit the maximum amount of sunlight, and the sun should reach every stall at some time during the day, if possible. A good system of ventilation should be installed which will provide plenty of fresh air at all times without the possibility of draughts.

The deep-rooting tendency of sweet clover has been found to greatly improve the drainage and deepens the soil effectively.

New York Dairying Activities

M. G. FEINT

The time has been when New York Holstein breeders dominated the American trade in stock in their breed. But of late they have lost much of their southern and southwestern trade to western states where the Holstein interests were federated. The eastern breeders think it is high time they fell into line and practiced some of the co-operative principles that have been so helpful to their competitors. They have been carrying on a two weeks' intensive campaign to extend the membership of all the county associations and to weld these into a state federation.

The state has very prominent and able breeders who have co-operated in the campaign, and they were assisted by the president of the National Holstein-Friesian Association, D. D. Aitken, and by R. C. Pollock, the Billy Sunday of extension work in Holstein circles, besides other widely known men. Over twenty counties were given special meetings, the schedule being arranged with regard to train service, two meetings a day being held throughout the campaign.

Efforts were made to emphasize the need of better breeding for milk production, and especially the need of using a pure-bred sire in all herds of grade Holsteins.

There was need of improving the quality of milk sold in New York city, and so the New York University managed its first importation of cattle since the war, bringing 250 head of high-class Jerseys direct from the island of Jersey and distributing to the farms of New York, Connecticut and New Jersey. One of the two prize $10,000 bulls died on the voyage.

The American Aberdeen-Angus Association is fortunate in their securing Prof. K. J. Suelke, of the New York State College of Agriculture at Cornell University, to act as their eastern representative, with his office in Ithaca. Professor Suelke was a valuable member of the animal husbandry department, and had made a reputation in the state for his ability in live stock matters.

PUTTING MILK INTO POLITICS

The dairymen of New York need to marshall their utmost forces during this legislative session if they are to protect the milk industry from the baleful effects of its being made a political institution. Governer Smith's "fair price" milk commission of nine members, none of them interested in agriculture, after a long period of inquiry and of listening to many interested parties who posed as dairymen, have recommended that the milk industry be controlled by a state milk commission of three members to be appointed by the governor. The governor's special investigator of the high cost of living also confined himself chiefly to milk, and recommended that it be made a public utility.

The disadvantages to the entire industry and the dangers to the consuming public that would follow close on making the business any more of a political matter than it has long been would seem too evident to need much defense. Yet the fact remains that the legislature is controlled by sinister influences in many unexpected places, not the least of these being the growing class hatred between city and country, and this matter must and will be threshed out most vigorously in the coming weeks. Practically every farm organization in the state is going on record as opposed to the proposal, and leading members of the State Council of Farms and Markets, the chief of the dairy bureau and others do not hesitate to pronounce the plan radical, revolutionary and even unconstitutional, as the recommendations would create an army of inspectors and clerks, and the farmers would have no voice in disposing of their product, but would have to operate under a license.

Political influences are also going to try to repeal the agricultural law that now allows to cattle breeders partial indemnity for cattle condemned as having tuberculosis. The dairy industry has suffered much from public attack in the past, but this winter there will be need of all the efforts the State Federation of Farm Bureaus and the Dairymen's League can put forth in defense of their dairy members. There is also the need of a pure-feed law to protect dairymen yet to be secured, after having been lost by only one vote last year.

DAIRYMEN ON STATE FAIR COMMISSION

There will be a vancancy on the state fair commission in New York on March 31st, and labor interests are vying with the farmers to secure the place. All the leading farm organizations of the state have endorsed the movement, and at a recent conference of agricultural leaders of the state Grange, George R. Fitts, of McLean, a fellow townsman of the writer, was selected as the farmers' choice. His selection was approved by the Dairymen's League, and will be by the state Grange, as he is a very enthusiastic natural rural leader, well educated, and a successful dairyman of much experience. He is president of his county's Dairymen's League Association and of the Tompkins County Farm Bureau Association. The state has not recognized agriculture for fifteen years by placing a farmer on the commission, though agriculture is the leading industry of the state.

A MEMORABLE STEP FORWARD

One of the most pronounced advances ever made by the dairying industry of the east was taken this week, when the Dairymen's League began its first operation of a centralized butter-making plant in Auburn, N. Y. The work is housed temporarily by the new farmer-owned co-operative dairy plant that has been equipped by the league for the farmers of Cayuga county. But ground is broken for several new buildings in which will develop the biggest thing of the kind ever undertaken by and for farmers. Auburn was chosen for its accessibility to the entire membership of the league or the 90,000 dairymen who live in New York and parts of four other states. Cream will be shipped to the plant and made into high-class butter, which will be sold under the league name and brand. If surplus milk is sent there, the cream will be churned, and the skim milk made into powdered milk.

During the recent snow blockades two immense new milk-drying machines of a new and most efficient type were installed, and they are operating perfectly and saving thousands of cans of milk that might waste when railroad traffic is hampered. By the new process, which was invented by J. R. Hatmaker, of Knoxville, Pa., natural milk is turned over a drum heated to 300 degrees, and is made into dry form in a second and a half. The new equipment of drying machines and mammoth churns will run night and day until there is time to erect more buildings.

This is but a step towards the things the league is planning to help farmers to market their milk more successfully. With the new drop of half a cent a quart for February milk, due to Danish importations of butter and a consequent drop in American butter prices, the producers are far from getting cost of production. These new helps cannot be put into operation too soon, as farmers must have some relief from a losing proposition, or the herds must be sacrificed, as the state seems determined to continue its unjust, aggressive policies towards dairymen.

Philadelphia Milk Price

After many conferences, both with and without the dealers, the decision of the Interstate Milk Producers' Association is to continue the present basic price for milk (9 cents for 4 per cent. milk f. o. b. Philadelphia, or $3.61 for 4 per cent. milk in the 50-mile zone) until July 1st, unless there is a very decided change in the price of butter and condensed milk. The present prices in the outlying districts will also remain the same until July 1st.

The price of surplus milk for January has been figured according to agreement, and found to be $3.12 for 4 per cent. milk at all receiving stations, with a 4-cent differential up or down according to butterfat test. The surplus price on direct shipped milk is 7.9 cents per quart with the same butterfat differentials. This makes the surplus milk price about 1 cent per quart below the basic price. The dealers report that the increase in production in January did not exceed 10 per cent. over the previous three months. If members will only continue with an even production during 1920, they will secure a far better price for their milk than during the past year.

Sunny Slopes

(Continued from page 101)

Carol was speechless, but David spoke up quickly.

"That is strange. Carol and I think it is a beautiful country—the broad stretch of the mesa, the blue cloud on the mountains, the shadow in the canyons, and, most of all, the sunshine on the slopes. We think the fight against T. B.'s is like walking through the dark shade in the canyons and then suddenly stepping out onto the sunny slopes."

"I know you are a preacher. I suppose it is your business to talk like that." Then when Carol and David only smiled excusingly, she said: "Excuse me. I didn't mean to be rude. But it is hideous, and—I love to be happy, and laugh——"

"Go on and do it," urged David. "We've just been waiting to hear you laugh."

"You should have been at the office with me," said Carol. "We laughed until we were nearly helpless. It is that silly Mr. Gooding again, David. He isn't very sick, Miss Tucker—he just has red rales. I don't know what red rales are, but when the nurses say that, it means you aren't very sick and will soon be well. But Gooding is what he calls 'hipped on himself.' He is always scared to death. He admits it. Well, last night they had lobster salad, a silly thing to have in a sanatorium. And Gooding ordered two extra helpings. The waiter didn't want to give it to him, but Gooding is allowed anything he wants, so the waiter gave in. In the night he had a pain, and got scared. He rang for the nurses, and was sure he was going to die. They had to sit up with him all night and rub him, and he groaned, and told them what to tell his mother, and said he knew all along he could never pull through. But the nurse gave him some castor oil, and made him take it, and finally he went to sleep. And everyone is having a grand time with him this morning."

Nancy joined rather grudgingly in their laughter.

"Oh, I suppose funny things happen. I know that. But what's the use of laughing when we are all half dead?"

"I'm not. Not within a mile of it. You brag about yourself if you like, but count me out."

"Hello, preacher! How are you making it today?"

They all turned to the window, greeting warmly the man who stood outside, leaning heavily on two canes.

"Miss Tucker, won't you meet Mr. Nevius?"

In response to the repeated inquiry, David said: "Just fine this morning. How are you?"

"Oh, I am more of an acquisition than ever. I think I have a bug in my heart." He turned to Miss Tucker cheerfully. "I am really the pride of the institution. I've got 'em in the lungs, and the throat, and the digestive apparatus, and the bones, and the blood, and one doctor includes the brain. But I flatter myself that I've developed them in a brand new place, and I'm trying to get the rest of the chasers to take up a collection and have me stuffed for a parlor ornament."

"How does a bug in the heart feel?"

"Oh, just about like love. I really can't tell any difference myself. It may be one, it may be the other. But whichever it is, I think I deserve to be stuffed. Hey, Barrows!" he called suddenly, balancing himself on one cane and waving a summons with the other. "Come across! New lunger is here, young, good looking. I saw her first! Hands off!"

(To be continued)

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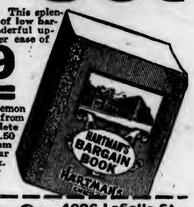

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The Practical Farmer

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THE prize winning experience letters from our readers dealing with various phases of live stock and dairying are in this issue. Each contains a worth while message which will repay reading.

PRIZE LETTER

Pure Breds vs. Scrubs

JOHN R. TIMMONS

A PROBLEM which should demand the careful consideration of every producer of live stock is: Should I raise pure-bred stock or not? Which will pay the best? From my own experience I can say that the pure bred is away in the lead. Possibly a few examples of how they financially benefited me will be as convincing an argument as several pages of other reasons.

One day last spring a dealer came into my barn looking for anything he could find to buy. I had a grade Holstein heifer calf one week old which I did not think was good enough to raise. I offered it to him for ten dollars, but six was all he would give. But right next to this grade was a pure-bred heifer about the same age and size. When he got his eye on the pure-bred his first offer was fifty dollars. But of course I kept the pure bred and sold the grade.

It is the same story with hogs. Last fall I sold my Duroc gilts for from forty to fifty dollars each, when at the price of pork they would have brought about twenty-five dollars.

Right now I am selling eggs for hatching from my pure-bred Leghorn hens for $1.20 per dozen, when eggs are worth but 60 cents per dozen here.

And, then, there is the consolation of knowing that you have something that other people admire, something that it is a pleasure to tend and care for. I really believe in pure-bred stock, and I am looking forward to the time when all the farmers in this community will keep pure-bred cattle of the same breed, and, by so doing, invite buyers from a distance to come where they can secure pure-bred stock by the carload. *Pennsylvania.*

PRIZE LETTER

Two Mistakes

JOSEPH E. FISCHLER

ABOUT twelve years ago we started with about a dozen grade Holstein cows and a pure-bred Holstein bull. Since then we have raised the heifer calves from the best cows, and have kept a pure-bred sire. Now we have forty-four head of high-grade cows and heifers. The stock is all doing and looking well, and we get a nice milk check every month. But I find that we made a great mistake twelve years ago when we did not buy one or two registered cows. Had we done so we might now have pure-bred cows. It would not have cost us any more to grow a pure-bred cow than a grade. All the difference would have been in the purchase price of one or two cows. Grade cows are now selling for $100 to $200,

(Concluded on page 108)

"Keeping everlastingly at it brings success" in dairying as well as other business

PRIZE LETTER

The Salvation of Dairying

J. N. GLOVER

HAVING clerked many public sales of cows last fall, when grade heifers sold from $60 to $170, to be fresh in a few months, and grade cows from $75 to $225 as fresh cows and springers, one is led to ask how these will pay with present prices of feed and labor, as against the price received for milk sold wholesale to condenseries. Much of this stock was pure-bred Holsteins, but not eligible to registry, so one could not expect to get big prices for calves for stock. Registered cows were sold up to $300 where the breeding was along good family lines, as many breeders wanted to get some registered cows to breed up a herd of cows eligible to registry, with big milk production, by using their registered bulls.

With the advance in bran, corn, oats, linseed and cottonseed meals and hay, and a lower price for butter and milk, where is the producer to come out with anything for his time and investment? It is not a question of cost plus a profit, but one of coming out whole. In order to know what each cow or heifer is doing for her owner one must know the cost or amount of feed given each one. Then the milk of each cow must be tested and weighed to find out which of the cows are paying for the feed consumed and which are boarders. Weighing feed and milk may be done by the individual farmer or through a cow-testing association, but it should be done, if one wishes to know which cows are paying. Then fatten or sell the cow which under favorable conditions does not pay a profit above feed. This is the only way to know and to do in the dairy business in order to be sure.

Since Denmark is shipping butter to this country, and the demand for condensed milk by Europe is decreasing, we may look for lower prices for dairy products, and can only look for more profit from the dairy by increased production per cow at decreased cost and by encouraging the consumption of milk and dairy products.

Farmers should eat butter instead of oleomargarine, use more milk, cream and ice cream, and then they may be able to get along with a little less meat and soft drinks. The real food value of milk when there are growing children in a

family is not appreciated by so many people, or the per capita consumption of milk would be greatly increased as a food and drink.

Why so many people will pay an increased price for a luxury, and then get the hysterics when milk producers demand a living wage in producing milk, is not quite clear. Dairymen should aim to produce good milk, and then consumers should be willing to pay a fair price for such a product. *Pennsylvania.*

PRIZE LETTER

A Dairyman's "Office"

PERCY H. TUCKER

I WONDER if you have one, or is it a high-sounding name that you steer clear of. We have our barns looking slick, we own a salt-and-pepper well-pressed Sunday-go-to-meeting suit of clothes, we may have a tractor, or running water in the house, and a white-aproned mistress that keeps our house spick and span, but we farmers seem rather slow about dressing up our correspondence. I wonder why? When we want to write a letter, we have to hunt up our writing material. The ink is rather low, and we have to add a little water. The pen is rusty, but we scour it up so it will scratch a bit. We can usually find enough paper, but envelopes are rather scarce. Sometimes we have a long one, again a short one. Sometimes we have a blue one, again a pink one. And sometimes they are stuck together, and we resort to the steaming teakettle to open it.

But, seriously, look at my farm office. It is what I think every farmer should have. Have all your stationery bear your name. Have a regular letterhead made up, and make it attractive. On the back of it you can have printed the premiums you have won at various times at various fairs. Have some billheads printed in the same style. You should have good-quality envelopes bearing your name and return address. If it is handy, every farmer should have a telephone. There are a number of other little things, but I think you are getting the idea. Last, but not least, is a typewriter. When you get one, you will never part with it. I wouldn't sell mine for twenty dollars more than I gave for it. I am rather what you call "wedded" to it. They are easy to work, and are well worth the price they cost. You would not go back to your old hand writing after trying one. A typewritten letter commands respect. Individuals like to deal with up-to-date business people. Then, too, it is a great advantage to be able to keep a copy of every letter written. Often it is worth dollars to be able to know just what was said in a certain letter to a prospective customer, and memory isn't always reliable. Make your three-thousand-a-year business have the "million-dollar" look. *Rhode Island.*

PRIZE LETTER

The Cream Separator

M. G. FEINT

IN our section of New York state almost everyone keeps Holsteins and sells liquid milk for use in New York city. Last fall I rebelled on the slavery to the milk train's hours and the prices of hauling milk, and bought a new cream separator. After nearly five months' use I want to say I would never run a dairy again without one. If milk prices are satisfactory next spring I may ship milk again through the summer. But never again shall I feel so dependent on the whims of the milk market.

For the past five years I have saved enough milk for abundant use on the home table and to make cream for all butter needed. The skim milk is worth as much or more for the hens, calves or pigs as it would bring otherwise, and there is always one or the other to feed it to. Heretofore the milk was set in pans and skimmed. Now it will be much easier to save milk for butter and to feed the animals about every other day and run it through the separator. Separated cream churns much more quickly and makes better butter than cream that is skimmed. As a business principle I believe there is as much profit in selling the cream and keeping the milk home for feeding as there is in selling whole milk. The farmer is much more independent, as his hours are his own. The cream does not have to be shipped but once a week in cold weather and twice in warm. No ice is needed—a big item now that the dealers are getting so particular about cooling. And the express charges on the cream are less than the hauling of milk, while the checks are mailed promptly after each shipment. *New York.*

PRIZE LETTER

Value of Corn Silage

S. M. TRIMBLE

TO the dairy farmer of today who is struggling with the high costs of feed and labor to show a profit on the right side of the ledger, corn silage is the biggest boon. In fact, I do not see how any man could feed cows profitably this winter without ensilage, as beet pulp and such substitutes are out of sight in price. Taking the value of ensilage per ton as five times the market value of a bushel of corn, we have, with corn at $1.50, silage worth $7.50 per ton. Can you show me any feed that has the nutrition and feed value equal to that at the same price? One of the most important factors, however, can not be measured in dollars and cents. This is the succulent value of silage. It gives a fresh green feed all winter, which keeps the cows in a laxative condition, and makes the milk flow as when on pasture. This past year we have fed the cows all the ensilage they would clean up three times a day. We have used less hay and grain feed than ever before, but in balancing up the milk records last night I find we have not fallen below last year's production either for total sales or individual records.

The first cost of filling the silo seems large, but in what way can you cut, shock, husk, haul and feed your crop of corn to the cows with less labor and waste than putting it through the silo? Also, in our part of the country we sow our wheat on the corn ground, and there is no easier way to clear the field for wheat than to harvest the corn for the silo, put the disk harrow on it and get ready to sow the seed—no hauling off and stacking the corn against a fence and then tearing it down to be husked. *Pennsylvania.*

Proper facilities and equipment mean much for profitable dairying

PRIZE LETTER

Light or Heavy Hogs?

FRANK G. DAVIS

WHEN we began to raise hogs, we endeavored to make them as large as possible, and to that end we often kept them for long periods of time. Then came a time when we tried out lighter weight hogs, and as far as we are concerned we had much better results thereafter, all things considered. This, of course, has no special reference to any certain breed, but to the age of the hogs. There are a number of reasons why we prefer to raise light weights. In the first place, we either butcher or market them so quickly that the chance of their contracting any kind of disease is far less likely than if we kept them a long time. Moreover, we turn over our money in a shorter period of time—a point that deserves consideration. We have also found that the lighter hogs cost less per pound to produce than the very heavy ones. For instance, almost anyone will agree that the first 90 to 120 pounds of meat can be produced cheaper than the next equal amount. We therefore raise more and lighter hogs.

For our own use, too, we much prefer the meat from small hogs. Being young, the pork is naturally tender, juicy and of a very fine texture. When a small ham is boiled, every scrap is devoured. On the other hand, a large ham means quite an outlay of money, and it carries a large amount of fat, some of which is generally wasted; and even before it is entirely finished one begins to tire of it. In selling hogs off the gallows we have found that small ones are much more readily disposed of than large ones, because they fit the pocketbook of the average consumer better. In fact, we have known of quite a few people who were willing to pay a few cents per pound advance in order to secure small hogs. The small hogs, however, must be fat. *Virginia.*

PRIZE LETTER

Our Plan with Hogs

WESLEY RAY

EVERY farmer is entitled to his choice of the kind of live stock to keep upon his farm, and generally he can advance a good, substantial argument in favor of some particular breed. Thus when we say that the Duroc swine is our choice, we do not mean to convey the idea that we think it the best hog in the country. This breed seems to answer our purpose better than any we have tried, and we have tried four different breeds. It seems that they are hardier and less liable to disease than most hogs, and they thrive on forage crops. The sows farrow from eight to twelve thrifty pigs, and we raise more of them to maturity than we did from other breeds.

We think that the secret of successful hog growing depends, first, upon the location, and, second, upon the ability of the farm to supply the animals plenty of good pasture. We all know that hogs relish rape, yet only a very few farmers supply this nutritious plant for their animals. Rape will produce cheaper pork when the pigs are allowed to graze it freely. We sow the Dwarf Essex variety, and it is now about time to make the spring seeding. We sow five pounds of seed per acre. We pasture this all summer by not grazing too close. Clover, rye, oats and cow peas enable us to make cheap pork. If corn was the only chance for feeding our swine, we would quit raising them. We are never bothered

(Concluded on page 108)

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MARCH 15, 1920

Farm Bureau Federation Starts Work

ON another page will be found an extended report of the first meeting of the American Farm Bureau Federation, which should be carefully read by everybody interested in agriculture. No matter what we may think of the general plan, we must recognize that here is a mighty force which must be reckoned with when it comes to questions affecting farmers. Surely the leaders in this movement have as much, and in some cases more, right to speak for farmers than some of the self-styled representatives now at the national capital. Indeed, the two following resolutions adopted at the meeting specifically show how the new organization regards some of the propaganda now being passed out as coming from farmers: "(1.) We wish the American people to definitely understand that the organization self styled 'The Farmers' National Council' has no authority to speak in behalf of the farmers of this country. (2.) Any and all efforts on the part of The Farmers' National Council to ally the agriculturists of America with the radicals in the industrial world is hereby denounced." Today's political office seekers, big and little, are going out of their way in referring to farmers as the great stabilizers, etc., of the nation, and now it remains for the farmers themselves to show what their ability and possibilities are along this line. The American Farm Bureau Federation has grown from strictly business organizations of farmers, and is not bound by political or fraternal features. It has enough money at its command to accomplish something worth while, and a great deal of interest will be taken as to what use it makes of these advantages.

A New Head for Penn's Woods

THE magnitude of Pennsylvania's once magnificent forests can be appreciated when we realize that today one-sixth of the state, or an area equal to the whole state of New Jersey, is devastated and unproductive. To restore these five or six million acres with forests would be an undertaking of some size, and Governor Sproul was wise a few days ago when he appointed Gifford Pinchot commissioner of forestry. Mr. Pinchot was chief of the United States Forestry Department under President Roosevelt, and brings to his new office plenty of practical experience acquired in this and foreign countries. He of course cannot restore all of this wilderness, because the state does not even own all of it, but he will have plenty of opportunity to apply his knowledge to the existing state forests and increase their value and usefulness, even if they do seem small in comparison with the possibilities. Farmers, more than any other class, ought to be interested in forestry, because their business depends so much upon it. Fuel, food, lumber, soil protection, crop protection from birds, animals and insects, summer comforts and beauty are all supplied by the trees, and can only be regained after a long period if the natural growth is ruthlessly destroyed. Mr. Pinchot has been a good friend of farmers, and in his new position should receive their whole-hearted support. He is worthy of it, and we wish him success in his new undertaking.

Our Live Stock and Dairy Number

WITH this issue we present you our annual live stock and dairy number. Possibly there is no phase of farming which means so much for a permanent agriculture as does stock farming. A short journey through any section, excepting possibly a few highly specialized localities, will convince the most casual observer that where good live stock is kept, there will be found the most prosperous farms and up-to-date farm homes. Pure breds, whether they are cattle, horses, sheep or hogs, always raise a man's estimation of himself, and pay in dollars and cents as well as satisfaction. The present crusade, started October 1, 1919, by the United States Department of Agriculture, for "Better Sires—Better Stock" is working in all the states of the Union to drive home this truth. Dairymen in their milk associations have recently been improving the market for their products, and sheep raisers have done the same thing with their "More Sheep—More Wool" and "Eat More Mutton" campaigns. Now the beef breeders are starting the same thing to have the consuming public "eat more beef." Last year each person in this country consumed several pounds less beef than they did in 1918, and at the same time beef exports declined considerably. Now comes the Department of Justice at Washington with a campaign to "save money on meat," and the first week will be tried out from March 22d to 27th in Illinois, Iowa, Wisconsin, Indiana, Ohio, Michigan, Pennsylvania, New Jersey and New York. The idea is not to decrease the consumption of meat, but to urge consumers to turn away from the high-priced cuts and eat those equally nutritious but costing less. The department believes that this plan, carried out under the direction of the fair price commissioners in the states mentioned, will increase consumption by having people buy more, but at the same time will lower the high cost of living for some individuals. It admits that such a campaign is primarily for the benefit of the consumer, but hopes that it will work the other way by keeping up consumption. Whether it will or not remains to be seen, but on the face of it the results do not look very favorable to the men who are now feeding high-priced cattle. On the other hand, exports of pork and lard in 1919 were unparalleled. During the year a million more hogs were slaughtered than in 1918, and the equivalent of eighteen million hogs weighing 200 pounds each were exported. All of which only goes to prove the old statement that those who stay with the live stock business through the fat and lean years are the ones who come out best in the end. It does not do to get in when the market is high and hope to reap a high return, because more often a failure results. The way to prosperity is through "sticking everlastingly at it," and on all sides can be found shining examples of this truth.

The Dog Law Taking Dogs' Lives

PENNSYLVANIA has had two years' experience now with its new dog law, and can well stop to consider what it has accomplished. Probably the greatest result has been the demonstration of the fact that it is possible to frame and enforce a dog law which will bring results and still allow plenty of freedom for properly restrained house, farm and hunting dogs. The greatest problem has always been how to handle the cur dog without penalizing the worthy dog, and it seems as if the new law solves it. Dogs found running without proper license tag—and if no one thought enough of them to pay the fee, they were in the homeless mongrel class—to the number of 147,053 were killed by officers of the law during the last two years. During the same period $146,172 was paid out in damages by the various counties as the result of dog depredations, mainly killing of sheep. During 1919 there were 6550 sheep either killed or injured by dogs, for which the counties paid $70,433. Owners of other live stock and poultry were also reimbursed to the extent of practically $9000 during the year for losses they had incurred due to dogs. Washington county, the banner sheep county of the state, suffered the greatest loss from dogs, which killed 553 and injured 394 sheep. Out of the sixty-seven counties in the state, only nine report having no damage done to sheep during the year. Last year there were 297,427 dogs licensed in the state, and these turned $383,410 into the treasuries of the various counties, as none of this money goes to the state. The license fees vary in the different counties from one to four dollars for each dog, but are generally one dollar for males and two dollars for females. Owners who fail to take out licenses are subject to arrest and fine, and last year the average cost of this neglect was $11. As the justice and efficiency of this law becomes better known, public sentiment increases in its favor, and each year its enforcement will be easier. Good dogs have their place in city, town and country, but the bad dogs—and there are still lots of them—must go and will go if they travel Pennsylvania soil, where the sheep industry is on the return.

Keeping More Corn Borers Out

LOCKING the stable door after the horse has been stolen is an old practice, so Uncle Sam will be forgiven if he does it once more. Since the scientists have definitely determined that the European corn borer originally reached this country through the medium of imported broom corn, beginning February 21st there has been a strict quarantine placed on imported broom corn, Indian corn and certain related plants from all foreign countries. Exceptions to this rule are that sorghum hay may come from Canada and shelled or thrashed grain of any of the plants, such as Sudan grass, Johnson grass, pearl millet and teosinte, affected by the quarantine. Thus it will be seen that the real quarantine is on the cobs or pithy stalks where the borer makes its home. Broom corn, for this reason, may be imported only upon permit and after it is disinfected at the port of entry. We will hope that these measures will prevent any further infection of this European pest, but as it is now known to exist in Massachusetts, New Hampshire, New York and Pennsylvania, there is the possibility of it still spreading and doing a great deal of damage.

Bulletin Helps for Farmers

Southeastern Pennsylvania, being one of the oldest dairy regions in the United States, can teach many lessons to other communities. The gist of its successful methods have been set down in a forty-two-page illustrated bulletin by the Pennsylvania State College, and makes profitable reading and study for any dairyman. A copy of the bulletin will be sent upon request to Pennsylvania State College, at State College, Pa.

"Dusting Experiments in Peach and Apple Orchards" is the subject of a bulletin just issued by the Virginia Agricultural Experiment Station. While this report is based on only one season's experience, the results are decisive, and the authorities believed that they should be available to fruit growers at once. A free copy of the bulletin may be obtained by addressing the experiment station at Blacksburg, Virginia.

PRIZE LETTER

Using Home Grown Feeds

M. G. FEINT

The best-informed farming experts of today say that straight dairy farming does not pay as well as that in which several lines of production are carried along, such as cash crops, fruit, poultry, etc., which may be combined with dairying. It is not the dairy so much that must be considered as the land and keeping it up to a high fertility standard. I am sure those farms that specialize on fruits or vegetables seem much more prosperous than the strictly dairy farms.

And so, while we believe in the dairy, we do not feature it nor spend much money in expensive feeds that are produced in the west or elsewhere, but, rather, we try to grow all our feeds, and regard the cows as a market for certain of them. The labor question is of such importance that we cannot see the wisdom of going to town every few days to haul in a big load of feed which is expected to make more milk to haul back to town. I believe the balance left in the hauler's pocket is not much more than if he had fed less heavily of his home-grown feed, even though he has less milk to haul back to town.

Of course, it doesn't pay to feed sparingly, and this applies not only to dairy cows, but to any other live stock on the farm—calves, yearlings, hens, pigs or horses. No animal can be a profit to anyone unless it is well fed and well housed, also comfortably bedded with plenty of dry straw.

Plenty of oats and buckwheat, some good husking corn and an abundance of well-matured ensilage corn, full of golden grain and good clover hay, makes a satisfactory ration, to my notion, with perhaps a little protein feed for those cows in milk. *New York.*

PRIZE LETTER

Home Butter Making

MRS. GEO. S. DAVIS

If you do not use a separator, have a place where you can raise the cream and keep it cool till ready to churn. After setting twenty-four hours, draw off the milk, and be sure to get all the milk out. Keep cream cool and sweet till twelve to twenty-four hours before churning. Put in a starter—clean sour milk or buttermilk from last churning. Keep cool, so it will not turn rancid. Stir thoroughly. Keep at 58 to 60 degrees (according to weather conditions—cooler in warmer weather) till it is well soured, but not extremely sour—just about like clabbered milk when it first thickens. Then churn, preferably in a swing churn. A barrel churn is second choice, but a crank or dash churn will not make the best butter. When it is in grains like wheat kernels, draw off the buttermilk, and wash in water 55 to 58 degrees till clear. Then if you have no butter worker, you can use a bread board and rolling pin, washing them in hot water, to which a little borax has been added; scald, then cool to prevent sticking. Dip the butter from the churn to the board. Sprinkle over it one ounce (two heaped teaspoonfuls) of salt to each pound. Bring the butter up over the salt so your roller will not stick to the salt; roll, and turn with paddles till it is of fine, even texture. Then stamp and put in butter papers. Keep cool and dry, and it will keep a long time.

Your butter stamp would be best if it were one of the kind that cuts out the butter like a biscuit cutter cuts dough, but if you have none, you could cut it into squares or oblongs with a paddle for home use, but could not get even weight. The trouble with the ordinary stamp is that working the butter into the stamp often spoils the grain and gets it oily. You should have the tools I have mentioned. Paddles may be made at home. You will need a dairy thermometer, and a wooden ladle for dipping butter from churn, so as never to touch the butter with the hands. It surely will pay to have good tools to do this work well, for every pound of good butter you make is worth 50 to 70 cents right on the farm, and good butter is hard to get anywhere. *Maryland.*

PRIZE LETTER

Exercise for Sheep

MYRON C. SAFFORD

We have had over fifty years' constant, intimate experience with sheep, and we know that to succeed with them they must have lots of outdoor exercise. Where we have had long, very cold winters with deep snows, compelling them to remain indoors for a protracted time, our losses of sheep and especially lambs the following spring have been heavy.

At the first farmers' institute that we attended, many years ago, one of the speakers was a man renowned as a successful feeder of fat lambs. He spoke of conditions at that time—open, mild weather in December. He said sheep ought not to be out eating the frozen grass; that they should be confined in the barn. Although I had followed the general custom of our farmers to let the sheep run out whenever the weather was fair, I thought if they would do better in the barn I would try it, and did so through the winter. Result: I lost more sheep and lambs that spring than I had ever lost before. His plan might be best for fattening lambs for early spring market, but not for breeding stock. We do not advocate permitting them to be out in stormy weather, but advise open shed with run of yards when fair and run of fields when free of snow. This has given us the best results. *New York.*

PRIZE LETTER

Groom the Horses

I. E. BLOYE

A well-groomed horse is a delight to the eye. How splendid the horses, especially those ridden by the officers, in an army parade look and seem to feel! Much of their fine appearance is due to the thorough currying and brushing they receive every day. For the soldiers say they were very particular about their steeds being well cleaned and cared for when they were in camp.

Thorough grooming improves the horse's feelings as well as its looks. Currying and brushing well done is to the horse much the same that a bath is to a person. It removes the dirt, opens the pores, improves the circulation, and aids the digestion. Care is half the keep of the horse. A well cared for horse will keep in much better condition on the same kind and amount of feed and do more work than a poorly cared for one. Some persons are so slack that they seldom clean off their horses at all. Many farmers are so rushed with work that they think they can not spare the time to thoroughly groom their work teams each morning, so they spend ten or fifteen minutes' work on them once a day, then Sunday they give them a good, thorough cleaning.

One of our neighbors is always held up by the other farmers of the neighborhood as a pattern to follow in taking care of horses. His team is always curried and brushed well every morning before it goes to work. If mud or other dirt gets on during the day, it is cleaned off at night, not left till morning. Another neighbor's son, in speaking of this farmer and his team, said: "I did not believe Dick when he used to say that if a man would curry and brush off his work horses well at least once a day, he could do the same work on half the feed, and his team be in just as good flesh and spirits, but I heard it so much I decided to try it, and my horses do look, act and work just as well again as they did before on the same amount of feed." *New York.*

PRIZE LETTER

Pumpkins as a Stock Food

PERCY H. TUCKER

It is very noticeable to me that most of us stock raisers and dairymen depend altogether too much on grain rations. An acre of land fairly well manured will raise an enormous quantity of pumpkins. As a hog food they are unbeatable. Just giving them to them raw in fair quantities they will do as well as they would on a fair grain ration. Pumpkins have a large amount of seeds which are very rich, while the flesh part is about the same as stock beets and turnips.

There is nothing you can grow at such low cost. Fifty cents' worth of seeds will plant an acre. And five cords of rotten stable manure in the hills will produce a bumper crop. There is no weeding or thinning out by hand to tend them; no digging, husking or topping in the fall to harvest them. Just go along with your farm wagon and pick them up. They will keep along until the middle of January, so if you raise enough to last until then, you will realize a great saving in other feeds, and your stock will look slick and healthy and have that well rounded out look they always have when they are fed nature's products at first hand.

Dairy cows will greatly increase their milk by feeding them, but I never succeeded in making horses eat them. Sheep like to nibble on them in great shape. The sooner we get over thinking there is nothing like our pet dairy ration, and feed something that brings equally good results that bear the trademark of "grown on my own farm stock feed," the sooner we will get that "flivver" we've been wishing for. *Rhode Island.*

The sire can make or break the herd.

Scrap the scrub sire.

PRIZE LETTER

Raise Your Own Dairy Stock

C. F. GRAHAM

The coming of the condensery and milk station has practically meant the doing away with stock raising on the dairy farm, which was and may be again a very pleasant and profitable occupation.

For a calf to raise, select one that is not deformed in any way, holds up its head, has bright eyes, a sleek coat, a good size, and is eager for its food. Teach it to drink, the first thing, treating it gently. This will save you trouble both with the calf and its mother. After the first ten days you can begin feeding it skim milk. The ration should be three tablespoonfuls of oil meal, which has been boiled in water until it is quite thick, added to six quarts of skim milk. If you see this causes bowel trouble, lessen the quantity of oil meal and give one teaspoonful of rennet extract in one quart of whole milk. When the calf is two weeks old it may be given a small quantity of clean hay each day. Keep the calf's quarters clean and dry and free from drafts, and you will have good luck every time.

Stick to your local creameries and cheese factories, so that you can raise calves and pigs. Do not run wild after the city man's fancy prices that do not always materialize, and you will die a richer man than your neighbor who sells his milk, buys his meat and butter, and, when he wants a cow, pays $150 up. *New York.*

Our Plan with Hogs

(Concluded from page 106)

with cholera or any kind of disease among our hogs. We keep plenty of charcoal where they can have free access to it. They have a bathing pool in which we keep a quantity of crude oil, which settles the lice question. One thing we are especially careful about, and that is their drinking water and sleeping quarters. We disinfect their beds every week or so with a strong solution of carbolic acid. We put a little of this in their drinking water occasionally. To sum it all up, we have had very marked success in growing swine in a small way. *West Virginia.*

Pure Breds vs. Scrubs

(Concluded from page 105)

while pure-bred cows are selling for $200 to $500 each. Quite a difference, eh? We thought we were too poor to buy registered stock twelve years ago, but we made a big mistake by not doing so.

Another mistake we made was by not putting water into the cow stable so that the cows could drink at will. The cheapest way to water milk is through the cow, and I find the best way to do that is to keep water before the cows all the time. I believe we have lost money enough every year to have put the water into the barn, besides the inconvenience of having to let the cows out and cutting a hole in the ice so that the cow could get but half the water she needed.

No man keeping cows is too poor to own pure-bred stock or have drinking cups installed in the barn. They sure pay big dividends. *Pennsylvania.*

Raising the Dairy Calf

W. F. McSPARRAN

Even the physical slow movement of such large bodies as the dairy farmer is controlled by natural laws and consequences, which is to say that the scarcity of cows has advanced their price to about what it costs to economically produce them—an operation of the old law of supply and demand, which law some of our radical friends want to tell us is no longer operative under present civic conditions. It does not take a very ancient memory to recall when really good cows of native breeding or perhaps of the good grades sold for about $50, and of course everyone who knows anything about farm stock knows, and knew then, that no one could produce a cow for that money, even if he stole the feed. But a few farmers here and there finally came to realize the losing side of the cow proposition and dropped out as producers of the grade or native strains. The number of awakened farmers increased gradually—as farm changes always come—till demand overtook supply, and we therefore now have the better prices. As a result we now have an increasing interest in the raising of calves for dairy cows.

Under these conditions the first question that should be considered by the careful dairyman who has the improvement of his herd in view must be: Is the calf worth raising? Does it inherit performance? Does it inherit constitution? Was its dam a good cow, a rich, continuous milker; did she have good udder and teats; was it a pleasure or an aggravation to milk her; did she give enough milk in a year to pay for her feed and the labor expended upon her, pay for her natural depreciation in value and give such a profit on all this commensurate with the modest expectations of the farmer? If she cannot answer all or most of these questions in the affirmative, she is a questionable breeding animal for the farmer-dairyman who is desirous of having his herd grow better year by year, as a good farmer expects his lands and herds to grow, under his wise stewardship.

Then, again, what of the sire of this calf that is to make a cow? Has he many generations of good animals back of him? Has there been an intensification of his good blood by wise selection and breeding along lines of actual family dairy performance, so that for him to sidestep his inheritance of dairy nobility would be a thing against expectation? Is he intensely prepotent? Was his mother a cow that could answer all the questions asked of the cow above in a most emphatic affirmation? Is he robust of health, a masculine, masterful bull? If he is not all these things, then very decidedly the raising of his offspring for the fond making of better cows is a dream that is bound to bring disappointment and loss at the awakening. Life is too short and human endeavor too vital for us to risk failure when we may be sure.

Having secured all these simple things for an heritance of the heifer calf we shall raise, it is well if we are conversant with some of the essential things in its care and feed. In this connection we should remember that simple pedigree has its limitations and is merely a chart to guide the breeder as to what he may expect from the calf. Positively in no sense can it take the place of feed and care. Indeed, these marvelous inheritances, being acquired characteristics, are absolutely dependent upon the care that shall be given the calf in nourishment and environment for their full and profitable development, and any periods of neglect in care or feed are very sure to be a minus factor in the full future usefulness of the cow. In other words, even with bad care and undernourishment the calf with such an inheritance may grow to be a very good animal, but if she is to attain the full measure of her possible potential usefulness, it must always be by reason of her having never been abused nor underfed; and if she shall make a fairly good cow with some neglect, with no neglect she should be a wonderfully good one, perhaps a fortune and history maker.

The calves of the rich milking breeds are apt to be born lacking some of the physical vigor and development of the rugged native stock—the pedigree of which has been the old order of the survival of the fittest—with a natural predisposition to attacks of calf maladies if such be present where the calf is born. If such is the case, the owner must be alertly watchful, not so much to cure trouble when it arrives, but to ward off its coming.

Fauvic's Prince, aged champion Jersey bull at the National Dairy show 1919. His first twelve daughters have average production of 9576 pounds milk and 545 pounds fat

The chief cause of such troubles with the new-born calf from a very rich milking dam is in overfeeding. Danger from this cause is often invidious in its approach, and may become very firmly established and dangerous before the caretaker is aware of its presence. Therefore caution is always to be recommended—caution in seeing that the baby calf is not allowed to fill its stomach beyond the point of safety. If there be any doubt where this point exists, always take advantage of the doubt and remove the calf from the dam while the calf is yet hungry. I have never had a calf to starve, but have had lots of them die from too much rich milk. The calf should be allowed to suck the mother the first time without stint, in order to get a full amount of the first milk. After the first feeding it is a measure of wise precaution to remove the calf from the dam and permit it to feed lightly, say three times daily. If the calf is entirely separated from the dam after the first feeding, and subsequently fed by hand from a clean vessel, the dam's milk being rich and the calf not strong, the milk should be reduced one-third to one-half with warm water, care being exercised to have the mixture at blood heat and the vessel always clean. I have recently noticed, in the matter of calf feeding, that some professional folks who should know better recommend reducing rich milk for infant calf feeding with skim milk instead of water. Now, obviously this is blind leading, for it is a serious unbalancing of the food that nature gave in perfect balance for the feeding of the young. By adding water, which is neutral, the original contents of the milk are maintained in their relative natural proportions, all diluted to the needs of the youngster. By diluting the too rich milk with skim milk we are simply adding to the elements that are most troublesome to the shy digestion, and instead of correcting the danger of the naturally too rich milk we are increasing it.

As the calf gets older it is, of course, able to take all skim milk, which should displace the whole milk very gradually and watchfully. It is not advisable to make this change completely till the calf is three or four weeks old. At the latter age the calf will begin to nibble at hay or the blades of silage and take small quantities of cracked corn or crushed oats or the two mixed; or, if available, good linseed oil meal may profitably take the place of the oats in this early ration, and usually can profitably remain part of the ration that was started with the calf all through the life of the heifer and the cow.

As soon as safety will permit, the calf should be encouraged in heavy eating, always with sufficient bulk in the ration to develop large holding capacity. Obviously the dainty eater can never become the great milking cow, for primarily the feed must carry to her functions the elements she shall, with a skill beyond that of the alchemist, transmute into the wonderful fluid men have named milk. The cow must consume our cake if we are to have it, and certainly the cake must be forthcoming for the cow to make good the promise we entertained in her inheritance.

Men—actual dairymen—do not milk pedigrees, but the pedigree starts the cow and is a dependable chart of what the cow may do in the hands of a wise and generous feeder astute enough to invest in his good pedigreed cow all the proper feed she can eat and digest. *Pennsylvania.*

PRIZE LETTER

Weighing the Milk

S. M. TRIMBLE

Not long ago, in soliciting members for a cow-testing association, a dairyman remarked to me that he defied any stranger to come into his barn and tell him which his best cows were. At the time, I was not in a position to fully explain the matter to him; since then he has been approached again and has begun "to see the light."

In my own experience, weighing the milk of each cow is a very profitable and interesting part of the dairy work, as it not only tells you just how much each cow is giving, but also tells the feeder the condition of each individual in the herd. At the end of the week I like to take the records and scrutinize each one carefully. Many peculiarities can be found. For instance, old "Bess" has been making 14 pounds daily for three weeks. Monday she jumped up to 16 pounds. What is the reason? Did the feeder give her an extra scoop of feed, or had the water bowl been stopped up so she had not been getting enough water previously, or had the regular milker been "cutting" because she has been a hard milker? All these things and many more are very important to the dairyman, and it is only by keeping accurate records that he can tell where the profitable cows are.

Our state college men tell us to feed grain in proportion to the milk each cow gives. We can not do this unless we know what each does give. There has been no man born yet who can walk into a barn and look over the cows and positively say that No. 1 is the highest producer or the most profitable cow, because her skin is soft, or her ears are long, or she is a "brindle," or any one of a half dozen characteristics. However, if he follows up his opinions by the Babcock test and the milk scales, and shows us, we can then begin to believe that he is telling the truth. *Pennsylvania.*

The Pennsylvania State College won first place on creamery butter and first on cheddar cheese at the recent Harrisburg Farm Products Show. Second place on creamery butter was taken by the Doylestown creamery, third by Bedminster Dairy Association, fourth by Grove City Creamery Company, and fifth by Tinicum Dairy Association.

Alfalfa thrives well where good drainage is provided, where there is plenty of lime in the soil and where the soil is in a fair state of fertility.

Lycoming county, with 1220 square miles, has the largest area of any county in Pennsylvania, and Montour is the smallest, with 130 square miles.

Forage Crops for Swine

W. H. TOMHAVE

The use of forage crops for swine is becoming more general in nearly every section where hogs are grown. It is generally recognized that such a system of swine growing materially reduces the cost of production and also improves the general health of the swine. The field demonstrations that have been conducted by the various agricultural colleges have done much to change the attitude of farmers regarding the use of forage crops in swine growing.

During the summer of 1919 a series of thirty-three demonstrations in fourteen different counties were conducted by the animal husbandry extension division of the Pennsylvania State College. In their demonstrations a number of different forage crops were used, and a total of 1017 pigs were included in the test. The pigs were kept on forage crops for an average period of 114 days from the time they were put on pasture. The average weight of these pigs at the time they were put on forage was 45 pounds per head. The final weight at the time the pigs were removed from forage was 135 pounds, making an average daily gain during the pasture period of .79 pound. In order that pigs will do well on pasture, they must be supplied with some grain in addition to the forage.

The total amount of grain required to make 100 pounds of gain on pasture was 312 pounds, which is from 150 to 175 pounds less than is required to make the same amount of gain where no pasture is allowed. It meant in this case a saving of about 33 per cent. of the normal grain requirement for growing pigs. The average cost of grain on these different farms was $3.21 per hundred pounds, which makes the total grain cost for 100 pounds of gain on forage $10.02. The forage cost per hundred pounds of gain was $3.27. This sum covers such items as man and horse labor, rent of land, seed, fertilizer, fence, labor in feeding and interest on investment. In this case, since all items of expense have been charged, it is only fair to allow credit for the manure produced for every hundred pounds gain made. A credit of 80 cents per hundred pounds gain was allowed, making the net cost of making 100 pounds of gain $12.49. Assuming that 163 pounds of grain were saved in producing 100 pounds of gain, it would amount to $5.23; deducting $2.43, the forage cost of making 100 pounds of gain, there was a net saving of $2.80 per hundred pounds of pork produced. The total pork produced on the 33 farms while the pigs were on forage was 91,785 pounds, which, if figured at a saving of $2.80 per hundred, would amount to $2570 as saved by these 33 farmers by using forage crops.

A total of 80 acres were used for forage on these demonstrations, or an average of 13 pigs to one acre. After allowing for all items of expense, there was a profit of $37.12 per acre from the land that was used for the forage crops.

Dwarf Essex rape is one of the best forage crops to use for swine. It can be grown practically any time during the growing season. It is relished by the hogs, and supplies a large amount of nutritious feed per acre. The cost of the seed for an acre is low compared with practically all other forage crops. It can usually be purchased at from 15 to 25 cents per pound, and from 5 to 8 pounds are required to seed an acre of ground.

A Bucks County Berkshire Sale

N. E. GARBER

The best thing that the Berkshire breeders of Bucks county ever did for the county was to hold a consignment sale of well-bred, typy animals, not the cast-off material of the various herds, but the "honest-to-goodness" stuff. The highest price received for any animal on February 14th, at the sale stables in Doylestown, Pa., was $400 for an aged boar belonging to R. E. Atkinson, Wrightstown, Pa. This boar, May Belle's Masterpiece 20th, has been in Mr. Atkinson's herd for quite some time, and he had to get other breeding lines. This boar was bought by the Herdlea Farms, New Hope, Pa. The highest price bred sow, Neshaminy Artful Belle, brought $205. She was owned by a 13-year-old girl who was a member of the Bucks County Pig Club in 1919. This sow was sired by the $400 boar, and bred to Fearnaught of Meadowsweet.

The hogs for the sale were all well selected, and the poor stuff culled out before the sale day. A committee of five was appointed to pass on the animals before the sale, and to this committee belongs the credit for building up the great demand for the animals at the sale. At one place three animals were rejected, and the owner promptly said that if any others were offered it would be taking his best stuff. "What are you doing, taking only good animals for the sale?" he asked in surprise.

The sale of forty-one hogs amounted to $4300, a little over $103 each. A thing that Bucks county is proud of is that seventeen of the animals remained in the county. It is hoped that next year there will be more than ten consignees for the sale, and it is supposed that there will be less trouble in finding the type that is wanted. The entire sale was managed locally. W. W. Blake Arkcoll, manager of the Herdlea Farms, and E. Newlin Brown, both members of the Berkshire Association, were largely responsible for its success.

Painting Milk Cans

It is a common practice to paint milk cans, but as a rule the dairyman's only thought in doing it is to enable him to pick out his cans more readily from among others when they are put out on station platforms by train crews.

The object in painting should be a double one, which can be attained at no increase in cost. That is, by selecting the right kind of paint the can is made easily distinguishable by its color, and is also made rustproof by the use of a special metal paint. This rust-inhibitive paint should at least be applied to the bottom of the can, as the protective plating of tin is soon worn off there, and the unprotected iron then becomes a quick and easy prey for rust.

Farm Happenings

AS TOLD BY THE BOSS

The first lot of hothouse lambs have been shipped to market. They weighed from 35 to 45 pounds each. This seems to be the desired weight at this time of the year.

It has been a hard winter to take care of the live stock, on account of the large amount of snow. The stock has been doing well, however, and should come through the winter in good shape.

Most of the brood sows have been bred for March farrowing so that the pigs will be of uniform age. An old building is being repaired which will be used for a farrowing house. A small room is built in one end in which a stove can be put and the little pigs kept warm during cold weather.

We have placed our order for Canadian field peas and Dwarf Essex rape. This is done so that the seed is on hand when the time comes to put in forage crops for swine and sheep.

The pure-bred ewes have been lambing during the past few weeks, and the lambs are strong and healthy. It has been pretty cold at times, but they will get a good start and be pretty well developed before the hot summer weather comes.

The steers in the feed lot continue to do well, and will be ready for market about the middle of April. They will have a hard time to pay for their feed bill if the tone of the cattle market does not strengthen.

Better Jacks for Sires

At the recent meeting of the directors of the Standard Jack and Jennet Registry of America, at Kansas City, Mo., June, 1920, was set for closing the registry against foundation registrations. The matter of closing the registry has been up for consideration at each of the meetings during the past few years. Action has been postponed each time, for the reason that it was the consensus of opinion that it was of the most vital importance to the jack and mule industries that the bulk of the best jack stock should be registered before the registry closed. The report of the secretary, William E. Morton, Scarritt Building, Kansas City, Mo., on October 6, 1919, called attention to the fact that the registry had 18,215 entries; that three volumes of the stud book, containing 12,000 entries, have been published and placed in circulation, and that the copy for Vol. IV, with 4000 entries, was about ready for the printer; that the registry was recognized throughout the country by the states having stallion registration laws and by the National Association of Stallion Registration Boards.

It's all in knowing how. Milking by machine does not harm the herd nor reduce the milk flow, experiments show, but the machines want to be properly handled and cleaned.

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Practical Sheep Notes

EDGAR L. VINCENT

No matter what other work we may have to do, it is well nigh imperative that we shall look after the ewes when the lambs are coming. A few losses of lambs at birth will take off all the profits for the season. Care counts.

When we are taking note of the value of sheep growing to the country, we do not always think of it that sheep furnish a great deal of the leather that is used in making shoes, gloves and other articles of wearing apparel. I was struck by the statement made the other day by a man who said that all the sheep in the New England states, if slaughtered, and their skins taken to one factory in Massachusetts, would not provide a two days' supply for the manufacturers of leather goods. And that is only one little corner of the world.

For all of that, however, I do not think I will greatly increase my flock at present; neither would I advise others to do so. A few more would be all right. If every sheep farmer would add, say, two or three sheep to his flock, it would relieve the situation very much.

In my travels I have lately seen a number of farms that do not produce anything worth mentioning. Parts of these farms cannot be plowed, they are so rough and stony. But they would provide fine pasture for sheep. The owners of many of these farms could do nothing better with them—unless it might be to set them to growing timber—than to keep sheep on them. Now they receive very little return from these farms, but sheep would prove highly profitable.

The people of the part of the country where the writer lives are not much on eating lamb or mutton. Why? Well, for one thing, they cannot get this kind of meat. Either there is none to be found on the market, or it is so high in price that folks cannot afford to buy it. There ought to be a systematic campaign to show people the value of mutton as an article of food. There is absolutely no kind of meat that is cleaner and more healthful than that from sheep. It comes straight from the earth, in the form of the purest vegetable matter known to mankind. Sheep never eat anything that would make poor or unhealthful meat, as the hog or the hen may. People should be helped to understand this better than they do. And then, as the demand for mutton increases, the supply ought to be increased accordingly. Were this done, the health of the nation would be improved, and more people could afford to buy and to wear clothing with wool in it.

When the last census was taken this country had 48,000,000 head of sheep. That was 32,000,000 less than we had at one time. Whose fault was it that this great falling off took place? I put the question to myself, and I cannot say that I am altogether guiltless.

Now, I say "guiltless," because I believe it is very nearly a crime when those farmers who are well situated for the carrying on of the sheep industry do not bear their part of supplying the great need for wool and meat of this kind. We are a people quick to see the economical side of things. How is it that we do not realize the money value of sheep, saying nothing about the philanthropic bearing it has on the health and comfort of the people of the world?

That was a fine demonstration which was made at the Massachusetts Sheep Growers' Association the other day when two boys, 13 years of age, named Leroy Dickinson and Eugene Graves, brought before the people present some of the sheep they had cared for. These boys are members of the junior extension service of the Massachusetts Agricultural College. If I do not miss my guess, a good many people went home saying to themselves: "I'll get some more sheep. If those boys could do all that, I know I can." They can, too.

New York.

The Milk Situation in New York

The seriousness of the milk situation in New York state was one of the important things discussed at Farmers' Week at Cornell, during the second week in February. The interest this year showed no decrease, although the blocked roads and the large amount of illness the state over reacted somewhat on attendance. The large number of persons who have become regular attendants is considered by the college especially significant.

Fred Rasmussen, secretary of agriculture of Pennsylvania, was one who emphasized the seriousness of the milk situation. He said that the dairy industry of New York state today is confronted by a real crisis, and "the next few months will tell whether or not this great industry is to continue to flourish or whether the great impetus given by war conditions and needs is to be lost."

He began his address by showing how before the war America's imports of dairy products were rapidly increasing. The war stopped this, and the exports increased enormously. Now importation has again been resumed, and with the drop in the European exchange rate the American market has become extremely attractive to the European farmer.

"But foreign competition is only one of the problems confronting the dairyman," said the speaker. Others he named were cost of feedstuffs, cost of labor, advance in transportation rates and the like. He urged the farmers to help meet the problem of feed costs by raising more feed crops, and spoke especially of the value of alfalfa, as well as corn.

Other fundamental problems which need the attention of the dairy farmer he enumerated as increased production per cow, decreased cost of production, increased consumption of milk and dairy products, a close study of the markets of the world, and the formation of co-operative selling organizations.

The use of milk may be greatly increased, he thought, by a campaign of advertising on the food value of milk. This would not only "relieve the industry from a surplus in case of a too sudden reduction in the exports, but also would bring forcibly to the attention of the public, milk as an indispensable food."

If the milk industry is allowed to suffer a slump in the state, all agriculture and every other industry will suffer, declared the speaker. He disapproved of state control of the industry.

Rank in the Various Crops and Live Stock

The following shows the counties in Pennsylvania that rank first in the various crops and live stock:

Lancaster — Wheat, corn, tobacco, horses and beef cattle.
Berks—Oats and rye.
Bradford—Buckwheat and hay.
Center—Barley.
Lehigh—Potatoes.
Chester—Milch cows and alfalfa.
Crawford—Cattle other than milch cows.
York—Mules and swine.
Washington—Sheep.
Franklin and Adams—Apples and peaches.
Erie—Grapes.

Certain wisely-conceived legislation to improve marketing conditions is clearly important, but legislation cannot be relied on to correct all the weaknesses of our distributing system, said George Livingston, chief of the federal bureau of markets, in an address at Farmers' Week at Cornell.

The state horticultural society at its recent meeting in Harrisburg passed a resolution requesting the director of the bureau of markets to establish standard grades for apples for the state of Pennsylvania.

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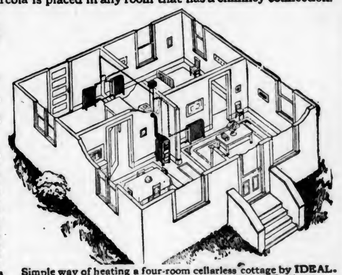

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Plants for the Farm Garden

W. F. MASSEY

BEDDING SWEET POTATOES

The latter part of March the sweet potatoes should be bedded to make plants for setting in the open ground. In the great sweet potato growing section of the lower parts of the Maryland-Delaware-Virginia Peninsula, while many in the Virginia end grow plants in frames under glass sashes, the majority of the growers in Maryland and lower Delaware simply make a shallow excavation for the manure-heated bed, cover this with fine, sandy soil, and when the heat falls somewhat they bed the potatoes and cover them with similar soil, and then cover the whole bed with the needles of the pine trees. When the plants appear the pine needles are raked off on sunny days and returned at night. This answers fairly well, as the Maryland growers do not aim at competing in earliness with the Virginia growers, but cater to the fall crops and the winter and spring market from large storage houses.

To avoid the worst pest of the sweet potato, I have found that the best material for bedding is pure pit sand. I use an ordinary cold frame and hotbed sashes, but I make no hotbed. I make in the frame a layer of sand three inches thick. On this I place the potatoes just so as not to actually touch. Then more sand is added to cover the potatoes two inches. The sand is settled with a sprinkling of tepid water, and the sashes placed on and left closed till signs of sprouting show. Then air is regularly given in all bright weather, and I get strong and well-rooted plants. Fertile soil is not needed, and may carry the spores of the rot, for the plants are produced from the stored-up material in the potato.

The black rot is carried from year to year by growers bedding in the same place every year and by bedding diseased potatoes. No potato which has brown blotches on the skin should be bedded, for that is the first stage of the black rot. Then, instead of using the small potatoes from the general crop for bedding, grow potatoes especially for this purpose. These are grown from cuttings of the best vines in the field in August, and are set thickly to make uniformly small potatoes, called here "slips." These keep more easily in winter than the early planted crop, and, being of uniform size and quality, they make more and better plants per square yard of bed than the cullings would. If it is necessary to use the same place every year for the sweet potato bed, the spot should be thoroughly burned every spring to destroy all spores of the rot.

In this section and in lower Delaware the bedding can be done at any time after the middle of March, earlier if glass is used, and later if an outdoor hotbed without glass is made. Those who prefer the dry yellow potatoes which are grown here for the northern markets should use the Gold Skin or the Big Stem Jersey. Those who prefer the sweeter and softer yams can plant the Nancy Hall, a very productive variety of fine quality for the southern home use, but not suited to the method northern people use in cooking sweet potatoes. A boiled or steamed Nancy Hall would be poor eating.

HARDENING THE TOMATO PLANTS

A writer for a southern farm paper said recently that the people northward should get the early tomato plants grown in the open air in the South for their early tomatoes, since they are so much hardier than the hotbed plants grown northward. These open-air plants are pulled from thick rows, and are about as poor stock as one could get. Properly grown tomato plants will have been transplanted early into cold frames and set four inches apart each way. Those set deeper will develop a mass of roots, while the open-ground plants that have not been transplanted will have big tops and small roots and will be little better than cuttings. The hotbed plants that have been moved to the cold frame and properly hardened will have stout stems, and tops rather short, and the stems will have taken on a dark purplish tint instead of the tender green.

Several years ago a grower at Brunswick, Ga., sent me some very large tomato plants. They were much taller than mine, but I saw that the stems were suspiciously green, showing tenderness. My well-hardened plants and these new ones were set. My plants made the first ripe fruit June 12th. The southern plants stood still a long time, and finally got started, and made the first ripe fruit in July. A tomato plant, whether started here under glass in hotbed or greenhouse, and allowed to grow crowded in the hotbed, and set out from there, is poor stock. Better sow the seed in a cold frame in March than let the earlier sown plants stand where they were sown. To make good plants they must be set in frames, and set deeper and given room for full development and hardened to the outer air before time it is safe to set them out permanently. The transplanting may be done here the middle of March, and in the latitude of Philadelphia the last of the month.

EGG PLANTS

If one has not the facilities for starting the egg plant seed in hotbed or greenhouse the first of March, he had better defer till the seed houses have plants in little two-inch pots. Then shift them into four-inch pots, and pack in a frame under glass, and cover the glass in all cold spells, growing the plants to a large size in the pots and turning them out in late May into very heavily manured soil; and if late May is cool, keep them in till June. An egg plant chilled is stunted for a good while. I keep them in the four-inch pots in the greenhouse, where finally the conditions are not much removed from those of a cold frame, when fires are abolished.

PEPPERS

The sweet Pimiento peppers I treat as I do egg plants, transplanting them to 2½-inch pots as soon as large enough to handle, and setting them in the garden from these pots the middle of May.

THE GREEN WRINKLED PEAS

The middle of March in the latitude of Philadelphia the tall late peas can be planted successfully, though down the lower part of the Peninsula earlier planting is more certain, as the hot weather soon causes a growth of mildew on peas. I use a variety called the Longfellow, and grow them on the wire fences of my garden. This variety grows about four to five feet high, and bears a large crop of large peas in long pods, and peas are of fine quality.

EARLY BEETS

The early beets planted down here in February and early March can be sown in the climate of Philadelphia the latter half of March if the soil can be had in good order. If beets are gotten up and in the rough leaf before being caught by cold, they will stand all the frosts that come later.

Spring turnips, also, of the Early Milan variety will stand early sowing and make a very acceptable vegetable dish. Down here the tops would be boiled for greens. In warm, light soil spinach seed may be sown the last of March, and some curled kale and salsify.

GROWING ASPARAGUS

After years of experiment I have proved that we can get asparagus a year earlier from sowing the seed where the bed is to remain permanently than by buying roots to set. Anyone with the slightest knowledge of plant growth knows that the digging of the roots after a year's growth is a great check to the plant. The transplanted roots take a whole season to fully recover from the shock, while the untransplanted seedlings are rushing ahead in full strength.

To make an asparagus bed, prepare the soil deeply, and manure thoroughly. Make trenches three feet apart and fifteen inches deep. Fill these half full of old, rotten manure, cover this two inches with fine soil, and plant the seed thinly along the center of the trench, and cover an inch. When the plants appear and get about three or four inches high, thin them to two feet apart in the rows. Then work the soil to them as they grow till level. Give side applications of nitrate of soda twice during the summer to push a rapid growth, and cultivate clean till frost. Then cut off the tops, and cover the bed thickly with stable manure. Let this lie all winter, and dig it in in the spring, adding some bone dust. Repeat the same cultivation the second summer and the manure cover every fall. The second season after sowing the seed you can cut some shoots, and by maintaining the feeding and cultivation you will get increasing size and quantity every season. Two months from the time the first shoots starts is as long as cutting should be made. After that cultivate clean and add fertilizer to promote a strong fall growth, for fine asparagus is made only by heavy feeding. The Palmetto variety seems more immune to disease than others, but any variety should be sprayed after cutting stops to prevent blight.

The loss from exposed manure is not great during severe winter weather, but with the coming of spring thaws, particularly when accompanied with spring rains, the value of the ammonia and potash may be lessened as much as a dollar a ton within a few days, experiments have shown.

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Another Glimpse of German Conditions

R. W. BALDERSTON

On January 30th I left Hamburg, and journeyed by train to Schleswig city, and there by auto to Kappeln, to see the milk-drying plant of the city of Hamburg, accompanying a party of city officials and representatives of the company erecting the plant three years ago; they were there to see about some modifications of the method of operation to reduce the present costs.

The route to Schleswig was uninteresting except for the Kaiser William naval canal, which all the railroads cross on high bridges so as not to interfere with the masts of the battleships. The magnitude of the work necessary to make Germany independent of the northern channels for her naval movements is very impressive. The canal does not seem to have much commercial value. From Schleswig the auto takes one through a very good farming country.

Kappeln is a quaint town of about three thousand. Some lumber is sawn and shipped on the Schlei. Dairy products are the chief source of income, and there are butter and cheese factories all around, and much milk is now shipped to the big cities. The milk (skimmed of its fat for the butter) is collected by the milk powder plant in the summer from the neighboring factories, and the average capacity last year was 20,000 liters daily. No work is done now, for the skim milk is sent to the cities to feed the older children (6 to 14 years).

Two thousand liters of milk were, however, collected for a demonstration for us, and this was run through in the evening, after the last of the officials had arrived, they having spent a few hours in a ditch on a bad road. The chief principle of the method used is to whirl the cold milk from a high-speed disk into the air of a room which has a current of warm air drawn through it by an enormous suction fan. The solids in the milk are precipitated in this air in fine particles, and are filtered out before the air goes up the chimney.

The ride back to Hamburg was without incident of note, except during the first part, because of the gathering darkness that intervened just after we recrossed the Kiel canal just above that city. From Kappeln to Eckenforde we came in a combination freight and passenger train that stopped at the rural centers and carried the country folk to town, together with their products. The farms were large, and the fields showed that the proprietors conduct their operations on a much larger scale than anything that I had yet seen in Europe. Often three teams of three horses would be plowing in the one field of about thirty acres.

It was noticeable that they were cutting much extra wood for fuel this year. The trees along the roadside were often all cut for miles and being worked up into boards and firewood. The farmers all seem to follow a practice of throwing up narrow embankments for dividing fences, and on these they plant a rapid-growing bush, which is periodically cut down to the ground for fuel. These are now all cut over in many sections, instead of in a longer rotation as is evidently their usual practice. Our American ideas would be sadly shaken if we tried to keep warm with the little twigs that are the sole fuel of the farm laborers, who seem to send the larger sticks, when they have them, to the towns. We Americans have not the slightest conception of how to save fuel, clothes and food and to save waste products and make our dollars go a long way.

Food conditions in Schleswig are not severe, unless it be in Kiel, for the supply is at hand. There was, however, nothing to waste, and the bread was as black as in Berlin. I saw no indication of any reserves, and there was every evidence of food control.

The Schleswig farmers on the train were comparing notes, and I took these figures: Cows are worth 4000 to 5000 marks; horses, 11,000 to 15,000 marks; calves, six months old, 800 to 1000 marks, and bulls, 1 year old, 2000 to 3000 marks. They said that new machinery for next year was not obtainable even when you had the price.

I could not find out, with my imperfect German, if the season was abnormal to be plowing in January. The rape fields had not been hurt with the frost at all, and the sheep were enjoying the pasture. The pits full of turnips show that there are plenty of them for this winter, but the government will call for them for the people of the cities if conditions get worse, I suppose. They are of the big, round kind, and are accompanied in the pits by the yellow and red mangels.

Hamburg, February 2, 1920.

Protecting Sale of Food

The first year of the administration of Governor William C. Sproul as chief executive of the commonwealth of Pennsylvania broke all records in the bureau of foods of the Pennsylvania Department of Agriculture. The annual report for 1919, submitted to Secretary Fred Rasmussen, of the Department of Agriculture, by Director James Foust, shows that this bureau collected more than half a million dollars in licenses. The activities of the food bureau have grown by leaps and bounds since 1907, when Director Foust's report shows that the receipts of the bureau were $55,732.63. It was not until last year, however, that the half million dollar mark was reached.

The business has increased steadily in volume from year to year, with the result that last year was a record breaker along all the lines of its activity. The receipts from all sources during the year were $541,487.37, but in this connection it is interesting to note that only a very small portion of this large sum was collected in the form of fines. Oleomargarine licenses netted $515,967.37, cold storage licenses $3600, egg-opening establishment licenses $1300, and renovated butter licenses $600, a total of $521,467.37, leaving the receipts from fines but $20,020.

Corn, wheat and clover—that is the most important rotation in America.

Where clover is no longer grown, yields are beginning to decline.

Water Systems on the Farm

There is scriptural authority for the statement that bitter waters and sweet do not flow from the same fountain. The same truth applies to wells on the farm. The family that uses a well or spring subject to contamination is almost surely destined to taste the dregs of sorrow or suffering for having drunk its disease-laden output. Investigations made by the United States Department of Agriculture indicate that only a small minority of farm water supplies can be classed as unqualifiedly safe and desirable. On the average, three out of four farm wells are located within 75 feet of a back door of the house and in the direction of the barnyard.

That convenience and first cost, not safety, have been the deciding factors in such cases is made evident by the nearness of barnyards, pig pens, pastures, fertilized fields, sink drains, privies, cesspools and areas rendered insanitary by chickens, slops and other filth. Too frequently the seepage from these and other sources, after joining the ground water, moves to wells and springs, impairing the water supply by impurity that may be grossly poisonous.

Popular indifference to the effective disposal of sewage has existed so long and so universally that only within comparatively recent years has it been realized that this waste product of human life is poison and must be kept from the food and drink of man. From the specific germs or poison that may be carried in sewage at any time there may result typhoid fever, tuberculosis, hookworm disease, cholera, dysentery, diarrhoea or other dangerous ailments, and it is not improbable that certain obscure maladies may be traced eventually to the poisonous effects of drainage from human waste. The poison is invisible to the naked eye, and it may be carried by many agencies, by devious routes, and be unsuspectingly received into the human body. Typhoid fever is peculiarly a rural disease, and many instances clearly indicate serious neglect of responsibility with regard to sanitation by people who live in the country.

Not to dispose of sewage promptly invites nuisance, but not to dispose of sewage cleanly and completely invites disease. It is not enough that human filth is taken 50, 75, 100 or 150 feet away from a well or spring or that it is taken merely to lower ground. Given loose or open subsoil, seamy ledge or long-continued pollution of one plat of ground, the zone of contamination is likely to extend, and readily may reach quite distant wells, especially at such times as well waters are lowered by drought or heavy pumping. Whatever the system of sewage disposal, it should be entirely and widely separated from the water supply, and, if possible, the surface of the sewage in any leaky privy, vault or cesspool should be lower than the lowest water in any nearby well. The United States Department of Agriculture has prepared Separate No. 712, from its 1916 Yearbook, entitled "Sewage Disposal on the Farm," which gives details regarding various types of outhouses, suggestions regarding plumbing, cesspools, septic tanks and related subjects. This pamphlet will be mailed free on request to those interested.

One of the first and obvious needs of American farms is pure water supplies. From the standpoint of the housewife, second only in importance to purity is the installation of a water system in the farm house that will save labor.

Continued pumping will not improve water in a well if the sources which feed it are permanently at fault. Wells can not be located in all cases to be wholly free from pollution, but the greatest safeguards are clean ground and as wide separation as possible from the probably channels of impure drainage.

Water for domestic use should be clear, lustrous, odorless, colorless, wholesome, soft, neither strongly acid nor alkaline, and its temperature for general farm purposes should be about 50 degrees. These characteristics, however, are never proof of purity, for a glass of water may possess them all and yet contain millions of disease-producing germs.

Ground water is the ideal supply for the farm. Any farmer who is about to have a deep well, and who is uncertain of the depth and quantity or quality of the water likely to be encountered, should describe fully the location and condition of his project to national or state geological authorities and ask for advice. The use of the willow, hazel or peach stick for locating underground water is without merit, although "forked-stick" artists from experience often are better able to judge the probabilities of ground water than the average person.

KINDS OF WELLS

Wells are spoken of as shallow or deep, dug, bored, driven or drilled, and, in the case of tubular wells, as non-flowing, flowing or artesian. Persons interested in the various types of wells and their construction, advantages, disadvantages, etc., will find the subject treated in Farmers' Bulletin No. 941.

Wherever possible, the farm house should be fitted with some sort of running water system, simple or elaborate, according to the investment the owner is able to make. For such systems, water may be raised by natural flow, hydraulic rams, pumps, air lifts or air-displacement pumps. Hydraulic rams are the most economical water-lifting devices. Since rams of various sizes and makes perform differently, it usually is necessary to accept the mechanical details determined by the manufacturer. The minimum, never more than the average, flow of the spring should determine the size of the ram, as otherwise the one selected may be too large for the dry weather flow. Small flows may be determined by noting the time required to fill a vessel of known capacity. Larger flows may be determined by Weir measurements.

Where the water supply is far from the ram site it is usual to pipe the flow to an open tank or reservoir located so as to secure the desired length and fall of drive pipe. Sometimes the flow of a spring is too small to actuate a ram that is sufficient for domestic requirements. In such instances, and

where a nearby brook can be dammed to obtain the necessary power head, the recoil of the ram may be employed to admit the spring water, which is pumped by the fall of the brook water in the drive pipe.

Motion of water produces friction, which increases with the length and roughness of the pipe and the rapidity of the water's movement. Hence wherever much water is to be delivered through a long pipe, the power or head necessary to overcome the friction should be determined. The bulletin mentioned before (Farmers' Bulletin No. 941) contains a table which shows the friction head, that is, the number of feet to be added to the vertical height for each 100 feet of iron pipe (not new) to overcome friction when discharging given quantities of water.

SELECTION OF PUMP

In selecting a pump, one should determine the kind of well to be used, its inside diameter, depth to the bottom, the depth cased, depth to the water level, both when the pump is at rest and in operation, and the maximum yield. The maximum quantity of water required per day should be calculated also. One should also determine the distance from the well to the proposed location of the pump and the vertical height between these points; likewise the distance from the pump to the reservoir or tank and the vertical height between these points. The kind of power to be employed should be settled upon also—hand power, windmill, gasoline or oil engines or electric motors—and the method of transmitting the power.

Farm pumps usually are of the suction, lift, force, deep-well type or some combination of these. Suction and lift pumps do not raise water above the pump nor discharge it under pressure. Suction pumps require the cylinder to be above the water level of the supply. If a perfect vacuum could be created within the cylinder, water could be raised vertically by suction 33.9 feet at sea level. However, the actual suction lift is usually not more than two-thirds of the theoretical lift. Methods of making tight joints are described in the bulletin referred to.

Horizontal suction pipes may extend long distances, providing the friction loss plus the vertical height from the water level to pump valve does not exceed the limiting suction lift. Where a pump can not be placed so that the limiting suction lift will not be exceeded, it is necessary to lower the pump cylinder into the well, raising the water from the cylinder to the spout by the direct lift of the piston. Water can be pushed more easily than it can be pulled, hence, rather than resort to extreme suction lifts, it is preferable to lower the cylinder to within 15 feet or less of the supply or, still better, to submerge it.

Where water is discharged against pressure a force pump is necessary. A practical installation for the kitchen sink is a combined suction and force pump, which will be found a great labor saver for the housewife.

DEEP WELL PUMPS

Deep well pumps are heavier and stronger than those described above. They may be of the lift or force type, and the standard or working head is always directly over the well. The cylinder should be near (within 15 feet) or else below the lowest water level which pumping and drought may create. Submergence is the preferable arrangement. In all installations the size of the pumping cylinder must be determined from the size, depth and yielding power of the well, the quantity of water required and the available power. Deep wells and hand or windmill outfits take small cylinders.

Pumping by means of compressed air is very old, but the systems used prior to 1909 required the air supply to be turned on or shut off according to whether or not the water was needed. Based on a patent granted in that year, a two-cylinder air-displacement pump, submerged in the water supply and controlled by the opening and closing of the faucet, was devised. The essential parts of installation, besides such a pump, are an air compressor, storage tank, engine or motor—with air and water pipes and minor attachments. The pump operates only when water is used, starting whenever a faucet is opened and continuing until all faucets are closed.

The chief advantage of air-displacement pumps is that water may be taken from ordinary depth or lateral distance, or from several sources, with one power outfit and delivered direct from the well to the faucet. The power plant may be located wherever convenient, and as many pumps may be used as there are sources of water. Both hard and soft water may be delivered by using two pumps and the necessary piping systems. Air-displacement pumps are not adapted at present to lifts much over 125 feet or to wells less than three inches in diameter, nor can they be used where more water is required than the well can supply within a specified period. Air pipes and air-displacement pumps must be tight and remain tight in service, and working parts must be kept in good order.

HORSEPOWER NEEDED

Water may be raised by hand, windmill, hydraulic rams, steam, hot air, gas, internal combustion engines or electric motors. Hand power is unsuited to large supplies or high lifts. Windmills are probably the most familiar type of mechanical power used, and often are arranged to start and stop automatically. Gasoline and oil engines are well adapted to farm pumping, and may be equipped to stop at any desired pressure in a supply tank. The use of electricity for pumping is increasing. The method is clean, quiet and convenient, and starting or stopping a distant pump by throwing a switch may be practical wherever transmission lines are sufficiently near.

The theoretical horsepower needed to raise water is found by multiplying the gallons pumped in one minute by the total lift, in feet, including friction in both suction and discharge pipes, and then dividing the product by 4000. The horsepower as computed should be multiplied by from 2 to 4 to overcome losses in pumping and still allow for a reserve of power. Ordinarily one to two horsepower engines are sufficient for farm pumps, but it is always safest to determine this point by computation.

An advantage to be derived from the well-installed farm water system often overlooked is the benefit it affords in the way of fire prevention. With relatively small expenditure, fixtures can be added to a pipe system which give ready access to the water supply for fighting flames. In almost every case a fire can be easily put out if discovered at its early stage, providing there is fire-fighting apparatus nearby and all hands, even the children, are taught and drilled to use such apparatus coolly and skilfully.

Creosoting Fence Posts

Posts of any non-durable wood can have their lives greatly lengthened if properly treated with creosote, say men who have tried the experiment. The treatment is simple and inexpensive. The post must have the bark entirely removed and be thoroughly seasoned. Particular care must be used to remove the thin skin of inner bark, says the department of forestry at the New York State College of Agriculture, at Ithaca, as this skin prevents the creosote from entering the wood. Seasoning will require from two to six months, depending upon the climate and time of year. These methods of treatment are suggested by the Cornell foresters:

BRUSH METHOD

The most simple, least expensive and likewise least effective method of treatment is applying hot creosote with a brush. The creosote or oil should be heated in a receptacle to a temperature of 150 degrees F. or more. Several coats should be given; each coat should be dry before the next is applied. The great drawback in this method is that the coating of oil is on the surface, and if further seasoning takes place and checks develop, the untreated interior of the post is exposed to the decay-producing agencies. The brush treatment is advised only when the other and more thorough methods cannot be used.

Dipping the post into the hot oil is a much better method. This requires some large vessel, such as a small tank or empty oil drum, in which a large quantity of creosote can be heated. The oil penetrates every check and crack of posts plunged in this bath, and a complete covering of the preservative is assured.

HOT AND COLD BATH

Better still is the hot and cold bath treatment, in which the post is allowed to remain in the hot oil one to three hours. Then the posts are taken out and plunged at once into a tank of cold oil, or they can be left in the first tank to wait until the hot oil becomes cold. Although it takes more time and costs more, this method will result in a much deeper penetration of the oil and consequently a longer period of life for the post.

Costs will vary with the kind of post and the method of treating. The best creosote now costs 45 to 50 cents a gallon in barrel lots, and in the hot and cold bath treatment from ¼ to ½ gallon is likely to be used for each post. In dipping, the creosote goes much further and the cost of oil is correspondingly reduced. Brush treatment costs run between 5 and 10 cents a post.

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Planting and Culture of Corn

R. B. RUSHING

Second only to the seed, I consider the most important part of successful corn growing to be the preparation of the seed bed, and I have found that too much stress cannot be laid on it. Too often the seed bed is poorly prepared, and the ground left lumpy and cloddy. This cannot result in the best yields, even though the after season be excellent for the growth of the plant. The grain of corn, when it is placed in the soil, needs to be packed all around with very fine particles of soil, so as to have an abundance of moisture, that it may germinate and come up quickly. And unless the soil is in fine particles, the little, tiny feeding roots which are first sent out cannot gather food for the plant. They cannot seize upon large clods or even small ones. Thus it is plain that harrowing must be well and thoroughly done or the plant cannot take root immediately and make a quick and strong start.

Much is being said at the farmers' institutes and through the farm press about seed selection, and I favor it all, but while that is receiving special attention (which it deserves) I think that the same amount of attention should be given to the bed where this good, tested seed is to find a home for the growing season. Now, suppose—of course, it won't be, but just for a moment suppose—that some of the champion seed corn should be placed in a poorly prepared field—such a field as we have seen much corn planted in at times—what would be the result? What would have to result? Nothing but failure of a good-paying crop.

Now, this is, of course, hammering at an old, worn truth, but I know of farmers now who either do not know this truth or else they do not care for it. And I am led to believe, for the future welfare of our farms we should give this land preparation and fertilization as much or more attention than the selection of the seed. I have actually seen what was very inferior seed placed in almost an ideal seed bed and make a good yield, and this very fact has caused many farmers to have mighty little faith in the value of first-class seed corn. I have heard the remark—perhaps you have, too—that most any seed would do if the ground was good enough, and it actually works out pretty well at times, when the season and other growing conditions are just right. But this fact does not in the least detract from the great importance of having the seed bed right. A properly prepared seed bed makes thorough cultivation more possible.

Methods of cultivation depend altogether on the condition of the soil and the weather. In cold, wet seasons I plant rather shallow, so that the kernels of the corn will be in the warmest portion of the soil. In hot, dry seasons I plant rather deep, to obtain more moisture. A cultivation with a weeder or harrow before the corn is through the ground is often desirable if the field should threaten to be weedy or if a rather hard crust should form from a hot sun after a beating rain. Many good stands of corn are ruined on account of a little lack of care just at this very critical stage.

The cultivation should be level and frequent when the corn is small. It may be rather deep at first, but must be shallow later. A study of the root growth of corn has shown that the main lateral roots lie about four inches below the surface of the soil between the rows. The roots gradually approach the surface near the root stalk, which requires that the corn should not be cultivated close the last time.

This work will all be easier and give much better results if the earlier preparation of the soil is thorough and complete. I don't much like to use the roller to crush the clots early in the season, as it always seemed to cause the soil to pack too much for the hot, dry weather, but the plank float, applied immediately following the plow and harrow, will get the clods if they are kept after. Tear the soil up and float down all the lumps till the soil is fine and mellow, then drill or plant the corn as you like, and the after part will be much more satisfactory.

Yes, you are in a hurry, but just plant what you can fix good, and work it good, and you will harvest more corn than when you half work the soil.

Illinois.

Federal Grades for Wheat to Stay

Federal grades for wheat will not cease to be enforced under the United States grain standards act when the United States Grain Corporation ceases to function. Reports have been received by the bureau of markets that farmers and grain dealers in some parts of the country are under the impression that the federal grades and the grain corporation will "go out" together. This rumor may be due to the fact that the grades went into effect at the beginning of the 1917 crop movement, at approximately the same time that the Food Administration Grain Corporation began its control of wheat marketing.

The grain corporation was created under a war emergency law. The law which empowers the secretary of agriculture to fix grades was approved August 11, 1916, and is a permanent measure. Federal grades for wheat had been contemplated by the Department of Agriculture for several years prior to the entry of the United States into the war, and a large amount of investigational work had been done toward establishing national wheat standards. The wheat grades would have been established at the time they were given if there had been no war and therefore no grain corporation. The grades were promulgated by the secretary of agriculture on March 31, 1917, to become effective on July 1, 1917, for winter wheat and on August 1, 1917, for spring wheat, and were revised in their present form, effective July 15, 1918.

Query Answered

Radish Maggots.—M. A. C., Newtown Square, Pa., writes us: "Will you kindly tell me, through the columns of your paper, the remedy for maggots in radishes? We had fine radishes, but they were full of maggots."

About the only thing to check the maggots is to inject carbon bisulphide near the rows. This will penetrate through the soil and kill them.

W. F. M.

Speed in Handling Hay

CHAS. C. CONGER, JR.

We handle from twenty-five to forty acres of hay each season, composed principally of sapling clover and timothy. We also cut and cure soy bean and cow pea hay, though rarely more than a few acres each season.

We find the profitable hay is that which is cut, cured and stored away without rain. For this reason we find it profitable to use any haying tools or implements that will hasten the job, for handling hay between showers is certainly no time to loaf. Sometimes we find it good policy to run two mowers, getting the hay down and curing as rapidly as possible. We find the tedder an indispensable implement for rapid curing of hay. By using it we can handle hay in the afternoon that was cut in the morning, kicking the hay up with tedder immediately after the noon meal, giving it a few hours of air and sunshine, and either piling it up in shocks or hauling it to the barn in the evening. This makes pretty quick work, and, by observing weather indications closely, enables us to dodge the showers and avoid getting our hay wet. We find two two-horse teams the quickest method of moving the crop, with a crew of five men, hauling light loads and more of them, reaching the barn together and one crew assisting the other in unloading. We use a hay fork of the harpoon type, finding it superior to the grab-hook type as a general-purpose fork.

While cow peas and soy beans are difficult to cure, we experience no great amount of trouble in curing them unless the season is unusually wet, when they are very difficult to cure. At one time we left peas and beans out just as they were cut till sufficiently cured to be stored. They were usually so badly sunburned that their feeding value was greatly reduced. Of recent years we have been practicing a far better method. We cut beans and peas, and allow them to sun-cure for a reasonable length of time, say two or three days, when they are raked up and shocked, where they remain till sufficiently cured to move to the barn without danger of spontaneous combustion. This method of curing peas and beans, while not as rapid as the sun-curing method, produces pea and bean hay destitute of the objectionable sunburning. That spontaneous combustion can be brought about by storing pea or bean vines improperly cured there is no question of doubt in my mind. *Virginia.*

The board of directors of the Ayrshire Breeders' Association announce, as a result of their meeting held at New York on February 27, 1920, that the forty-fifth annual meeting of the National Ayrshire Breeders' Association will be held in Chicago, Ill., on Wednesday, June 9, 1920, and that the second annual national sale will be held in connection with same on Thursday, June 10th.

A well-kept wood lot or a plantation of forest trees on the steep, rocky portions of the farm will help make the place more attractive.

About 43 per cent. of the sheep in Pennsylvania are in Washington and Greene counties.

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Make your farming operations more efficient with GRO-ALL Fertilizers. Every atom of plant food becomes available under natural soil conditions. There is no waste. GRO-ALL Fertilizers are always in good mechanical condition—never hard or lumpy. This means labor saved for the farmer, and labor saved is money earned. Feed your land with liberal applications of GRO-ALL each year and harvest larger yields of improved quality.
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American Farm Bureau Federation

On March 3d, at Chicago, the American Farm Bureau Federation was made a permanent organization by unanimous vote. Four hundred delegates were present. Since the organization meeting in November twenty-eight states had ratified the constitution and were admitted to the association by the executive and credentials committees.

Below are the names of states which ratified the original constitution, giving the number of directors from each, a close estimate of the membership, and approximate amount of money which will be paid into the A. F. B. F.

The total number of directors is 53, the total membership is approximately 700,000, and total budget for the first year approximately $200,000, according to the report of temporary Secretary J. W. Coverdale.

States	Voting Directors	Membership	Funds
New Jersey	1		$500
Minnesota	2	17,000	1,000
Massachusetts	2	14,045	800
Illinois	4	50,001	50,000
Iowa	6	104,388	52,194
Colorado	1	4,000	500
South Dakota	1	3,000	250
Missouri	3	34,000	8,200
Kentucky	1	8,000	2,000
Michigan	3	31,000	15,000
California	2	19,000	1,900
Georgia	1		1,000
Arizona	1	1,200	250
Wyoming	1	1,500	
New Hampshire	1	6,000	600
Vermont	1	8,198	800
Utah	2	12,000	600
Indiana	3	31,000	15,500
New York	4	67,000	6,700
West Virginia	2	15,000	2,000
Nebraska	1	14,000	1,000
Ohio	3	30,020	4,500
Idaho	2	14,000	1,400
Oklahoma	1		250
Maryland	1	5,000	250
Connecticut	1		
Kansas	2	14,000	
Texas	1		

James R. Howard, of Clemons, Iowa, was elected president, and S. L. Strivings, New York, vice-president. Executive committee members were elected as follows, by regions: Northeastern section—E. B. Cornwall, Middlebury, Vt.; E. F. Richardson, Millis, Mass.; H. E. Taylor, Freehold, N. J. Middle West section—O. E. Bradfute, Xenia, Ohio; Chester H. Grey, Nevada, Mo.; Howard Leonard, Eureka, Ill. Far West section—W. H. Walker, Willows, Cal.; W. E. Jamison, LaVeta, Colo.; John F. Burton, Garland, Utah. South section—Grey Silver, Martensburg, W. Va.; James W. Morton, Athens, Ga.; George Bishop, Cardell, Okla.

The directors voted to pay the president $15,000 a year and allow $3000 a year for traveling expenses. It was decided that the president should be the foremost executive and leader of the organization. The executive committee will employ the secretary and determine where headquarters will be.

It was voted to change the manner of paying dues from the present method of 10 per cent. of all farm bureau membership fees under the state organization to 50 cents per member, this change not to go into effect sooner than January, 1921. Under the constitution provision is made that no amendments will be effective until approved by a majority of the member states.

A ruling was made that dues be paid on the basis of paid membership dues by members in the county farm bureau belonging to the state association on the first day of each quarter of the year, starting April 1, 1920.

PROGRAM OF WORK

At all meetings the program of work for this year was discussed. The definite projects were made in the resolutions in the form of a recommendation to the executive committee.

The executive committee was instructed to set up without delay a business organization, under direction of trained experts, and create bureaus or divisions as follows:

(1.) A bureau of transportation, which will look into transportation matters by both rail and water, to the end that we may secure rates on farm products which shall be fair as compared with rates on other commodities and which shall give to the farmers of the United States ocean rates which will enable them to compete on a fair basis with the farmers of other nations of the world.

(2.) A bureau of trade relations, which shall investigate our dealings with foreign countries, to the end that the interests of agriculture may be promoted.

(3.) A bureau of distribution, which shall make a thorough study of the distribution of farm products.

(4.) A bureau of statistics, which shall inquire into world conditions which influence supply and demand, and which shall especially study the mechanics of prices.

(5.) A legislative bureau, which shall have to do with matters of national legislation which affect farming and farmers.

(6.) A bureau of co-operation, which will make a special study of co-operative methods which have been found to be successful both here and in other countries, and which shall draw up standard forms for co-operative enterprises of various kinds and aid state federations to promote local co-operative enterprises on thoroughly safe and truly co-operative lines.

DIGEST OF RESOLUTIONS

The resolutions set forth in very definite terms a pledge of full support to the constitution of the United States, condemning radicals and reactionaries.

Increased production is essential to national well being. We stand for higher individual efficiency. In determining a compensation we believe that the result of the day's work, rather than the hours thereof, should be of paramount importance.

We pledge the farmers of America to the largest possible production consistent with good husbandry, with a view of relieving the world's dire necessities, and invite the workers of all other industries to join us in this spirit of service.

We declare the strike no longer justifiable and no longer to be tolerated by a long-suffering public.

We favor the creation of such arbitration boards or courts, with power and authority, to adjust controversies between labor and capital as shall safeguard the rights of the parties directly interested, as well as the welfare of the general public.

Realizing the need of trained workers and a healthy citizenship in all walks of life, we urge such general course of instruction of our young manhood as shall call attention to and give promise of relieving general health conditions throughout the country.

We hail the American Legion as one of the most important factors in the life of America, pledge our support in its great work, and welcome it to comradeship.

We pledge the full strength of this institution and its individual membership in support of the good roads movement throughout the country.

Deploring the waste and extravagance of the present day, we urge the necessity for a return to the more humble and prudent practices of the past.

Our country needs stability, and the brakes must be applied to secure that much-desired result. Waste breeds recklessness, a lack of responsibility, and is the best aid to the profiteer, whose selfishness knows no country and who has no regard for the rights of masses.

We recommend legislation providing that the presence of all substitutes for virgin wool in fabrics and apparel purporting to contain wool shall be made known.

We recommend that a committee be appointed to confer with the International Revenue Department in working out a simplified form for income tax returns for farmers.

We definitely and emphatically oppose the proposed legislation to levy a tax of 1 per cent. on land holdings in excess of $10,000.

We demand for agriculture, at the hands of state and national legislative bodies, the privilege of collective bargaining.

We insist that in all tariff legislation agriculture be given equal consideration with other industries.

We wish the American people to definitely understand that the organization self styled "The Farmers' National Council" has no authority to speak in behalf of the farmers of this country.

Any and all efforts on the part of The Farmers' National Council to ally the agriculturists of America with the radicals in the industrial world is hereby denounced.

President J. R. Howard made the following statements in his short address: "The lands we are cultivating must continue to feed the people of the nation for all times. There are no new lands for us to take up. It means we must conserve and cultivate our soil better, must work out our business and economic problems and make farm life more attractive in the homes, schools and churches. We must make agriculture so attractive that it will appeal to and build the best citizens. We are building an organization to do these things, not only for our own good, but to fulfill our obligation to society."

Vice-President Strivings said: "Agriculture must be made profitable. That must be part of our program to protect future production and agriculture. The vacant farmhouses of New York and the crowded cities bring the truth clearly before us. Not we alone will suffer if this condition is not brought about."

Upon invitation of Hon. E. T. Meredith, secretary of agriculture, the entire executive committee immediately left for Washington to get acquainted with the Department of Agriculture and meet the agricultural committees of the senate and house.—This report compiled by E. L. Bill for temporary Secretary J. W. Coverdale, Ames, Iowa.

Fertilizers for the Orchard

Experiments in apple orchard rejuvenation conducted in southern Ohio sections show a gain of 80 barrels an acre as an average for a five-year period where fertilizers have been used to stimulate the apple crop. With apples selling at $7 a barrel this means an increase of $560 per acre. The cost of fertilizing is about 35 cents a tree or $12 an acre.

The fertilizing program now recommended for orchardists consists in the application of 5 pounds of nitrate of soda (or 4 pounds of sulphate of ammonia) and 5 pounds of acid phosphate, applied in a circular form under the outer extremities of the branches.

The grass mulch system, which consists in mowing the grass produced by these fertilizers and allowing it to lie under the trees where cut, is also favored. It has been found that the tillage cover crop system does not produce larger yields than the grass mulch method, while the cover crop system is more expensive in operation.

Tests in orchard fertilization which have been carried on for more than ten years by the Ohio Experiment Station have practically revived a lost industry in southern Ohio, the state regaining the place in apple growing which it held fifty years ago.

Attractive and sanitary buildings are a business asset to any farm.

Destroy Peach "Mummies"

When peaches are being pruned is the time to take off all the rotten fruit or "mummies" left hanging on the trees. The brown rot, which destroyed so many peaches in 1919, can live over winter in these mummies and thus be ready for business when spring opens, says the bureau of plant industry.

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Lights in the Hen House

"Early to bed" may produce health, wealth and wisdom among men, but for the modern, up-to-date hen, late hours and midnight cafeterias are now the style. So well is biddy thriving on this kind of life that artificial lighting of hen houses has been enthusiastically and profitably adopted by over one hundred poultrymen in New Jersey, and more are joining the ranks daily.

"Are the returns really worth the trouble and expense involved?" the skeptical ones ask. Here are a few figures compiled by W. H. Ellis, a Monmouth county poultryman, who, in co-operation with the county agent, has been running a demonstration on the use of electric lights in one of his laying houses. Draw your own conclusions.

Without lights, in October, November and December of 1918, 350 pullets laid 3512 eggs. During the same months a year later, 365 pullets with lights produced a total of 6178 eggs.

A pen of one and two-year-old hens without lights made in October, 1919, a 24 per cent. production; in November this had slumped to 7½ per cent., and in December to 2 per cent. A similar pen with lights produced 28 per cent. in October, 24 per cent. in November and 15 per cent. in December.

With a 12 per cent. increase in flock, Mr. Ellis, by the use of lights, made an 87½ per cent. increase in production, the figures being as follows:

	1918 Without Lights	1919 With Lights
October	1983 eggs	4147 eggs
November	1973 "	3400 "
December	2521 "	3579 "
Total	6477 eggs	11,126 eggs

But what of the expenses involved in running a lighting plant? Figuring on the above three months, the total estimated increased expense amounted to $76, the increase in money taken in was $416, leaving $340 to the good. Lastly, working under lights does not in any way injure the layers.

About Raising Chicks

It is said that "anyone with hair on his head can operate an incubator, but it takes a man with a wrinkle in his forehead to raise chicks." Simply following the instructions which come with the incubator does not assure success. To raise the chicks requires that one thoroughly know a chick's needs, and at the same time make use of plenty of common sense. The smallest details may be of great importance. Any condition that threatens or disregards the comfort of the chicks, especially when they are young, must be avoided, or unpleasant results will follow. Neglect of the incubator at any time during the hatching period can easily result in a partial or a total loss of the hatch.

The temperature of the nursery tray in the incubator should be the same as the temperature of the brooder for the first few days. This is 98 degrees Fahrenheit. A good temperature for the second week is 95 degrees; the third week, 92 degrees, and the fourth week, 85 to 88 degrees, says P. T. Zeigler, poultry instructor at the Pennsylvania State College. He also warns poultrymen against crowding chicks in the brooder. If the capacity of the brooder is rated at 1000 chicks, it should be divided by two to get its actual working capacity. There is a tendency among manufacturers to overrate brooders. Their capacity will probably be adequate when the chicks are young, and they will care for the specified number at this time, but when the chicks grow, the brooder remains the same size. Result: Chicks become overcrowded before the owner realizes it. Some of them die. This is a good thing; it gives the others room to live. But if enough brooder space is provided, all the chicks can be cared for up to two or three months of age; they need not die—which is better.

Selecting Eggs for Hatching

Hatching chicks is a proverbial lottery, but it is not all chance, according to poultry specialists at the Pennsylvania State College, who declare results can be manipulated by the kind of eggs used and the way they are handled before they are placed in the incubator. Eggs of various sizes, shapes and ages seldom give a uniform hatch. If some have heavy shells and others thin shells, they will not hatch satisfactorily. A careful selection for uniformity pays. Normal shaped eggs of average size are to be relied upon. Hatching a chick is a delicate job at best, and it is as impossible to give each chick the individual treatment it needs in regard to heat and moisture as it is to know what that individual treatment should be. Since all the eggs are treated alike they must all be uniform or they will not respond in the same way.

Eggs for hatching should not be more than two or three weeks old. They should be as clean as possible, but they should not be washed. Water removes the natural film which covers the egg and which is a protection against evaporation of moisture from the egg. Washed eggs show too much shrinkage and hatch weak chicks. Health and vitality of the hens influence the ability of eggs to hatch. If the poultryman's best judgment is exercised in selecting the eggs, he can hope for more and stronger chicks than if he takes the eggs as they come.

The infertile eggs which are tested out of the incubator the fifth or seventh day need not be thrown away. If kept they can be boiled and fed to the young chicks. They are the best food for the very young chick.

The use of commercial fertilizers in New Jersey has grown greatly during the past twenty years, largely as a result of the investigations at the experiment station. In 1917, New Jersey farmers used 176,000 tons of fertilizer, as compared with 110,000 tons in 1909. Also, a big advance has been made in the past five years in the use of leguminous green manure crops, and farmers are yearly increasing their production by planting cow peas, soy beans, vetch, clover and alfalfa to add more nitrogen to the soil.

Pennsylvania produced last year 138,000 bushels of sweet potatoes. The crop was worth $248,000 at $1.80 per bushel.

Poultry Woman Offers Baby Chick Book Free

BESSIE B. CARSWELL The Poultry Woman

Bessie B. Carswell, the poultry woman, and an expert on baby chicks, 923 Gateway Station, Kansas City, Mo., is giving away her book on baby chicks, which tells how she successfully raises 98% of her hatches by using a simple home solution to combat white diarrhoea, the fatal chick disease. This valuable book is FREE and you should certainly write this successful poultry woman for a copy.

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EGGS from thoroughbred Light Brahmas, Columbian, Wyandottes, Silver Campines, Rocks, Reds; $1 per 13; $2 per 30; Leghorn, $1 per 15. No postage paid. S. G. BEALER, Coopersburg, Pa.

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TOPIC No. 1289, APRIL 15.—What have you done to help the condition or improve the appearance of the public road which runs through the farm? Who keeps the road bushes cut in your locality, the supervisors or the owner of adjacent land? What about road shade trees? What is the best kind of road fence?

TOPIC No. 1290, MAY 1.—What is the farm labor situation in your locality this spring? What wages are being paid for married and single men, and what privileges are supplied? Has the help problem affected your usual methods of farming in any way? Have you had success with girls or women hired for outside work?

E. B. S., Rock Point, Md.—In our general farming we necessarily need a great number of plants such as sweet potato, tomato and cabbage, and unless one grows them himself he is never sure of getting a supply when he needs them; also, it is really easier to grow ten or fifteen times as many as one needs than it is to grow just enough, when one takes into consideration the greater risks of not securing plants when one tries to grow "just enough." Therein lies the basis of our side line; we sell the extra plants.

Last year was an exceptionally bad season in our locality, but at that we sold enough sweet potato plants to cover the cost of the seed and making the beds—and one barrel of seed potatoes did not sprout at all. Where would we have been if we had bedded for our own use only that barrel of seed?

Last year, fully expecting as bad a season on late cabbage plants as on the sweet potatoes, we did not advertise. At that we took in on them something over fifty dollars more than the cost of seed and preparation of seed bed, besides getting all our own plants for nothing. And the most exacting work was done on rainy days, when not much else could have been done anyway—the work of drawing the plants. Had we advertised, we could have sold about twice as many plants from the same bed and at practically no extra cost.

This year we expect to sell for four or five hundred dollars on this side line, the most to come from sweet potato and cabbage plants. The extra work in preparing the beds and the extra cost for seed will be almost nothing over what it yould cost for our own use only, and the work of drawing the plants usually comes when there is not much that can be done in the crops, so one might as well say that five hundred dollars would be a clear profit and absolutely no extra risks run to get it. Is it worth while?

P. E. T., Princess Anne, Md.—My side line has been bees during all my farming experience. I did try hatching eggs, but I soon found that the side line would soon be the main line. I get a great deal of pleasure and satisfaction out of bees as a side line, and some money, but the money is not the main thing. We have honey on the table at all times, and there is no better sweet for anyone, and I can sell at a good price all we can't use.

I formerly ran my bees for comb honey, but I now run for extracted, and am not bothered with swarms so much in a busy time on the farm. I have the brood chamber large, or, in other words, use a large hive, and give them room in time, and by a little looking after, the bees will take care of themselves during the busy season. Then, toward fall, in a lull in the farm work, get your extractor ready and take off your crop of honey.

A. J. L., Albion, W. Va.—I have tried selling eggs for hatching from pure-bred fowls, and succeeded in getting sale for a few eggs to be shipped at fair prices, but our shipping facilities were not very good, and we decided that it did not pay for the extra trouble.

We tried selling pure-bred pigs for breeding purposes, and made fairly good money on them, as we had a demand for as many or more pigs than we could furnish some years at good prices. Other years we did not get sale for all that we could furnish, but the pigs made good porkers and we did not lose out.

A few years ago cholera got among our hogs and put us out of business with pure breds, but we expect to stock up again, as there is an active demand for pure-bred hogs, and people are more ready to invest in them than they were several years ago.

W. R., Carbondale, W. Va.—I have found that a side line to my farming pays handsomely if one is really in earnest about it. Growing extra early garden plants is perhaps the best side line for those who can take enough interest in the work. We use the ordinary hotbed, which is made by digging a pit 2 feet deep and 8 feet in width by 20 feet in length. A frame or box is built 4 feet high around this, and the earth thrown about the box to within 10 inches of the top and pressed firmly so as to exclude air. This box pit is then filled with new stable manure to within one foot of the top and beaten down quite firm. Then eight inches of rich loam is put on this. Be sure that there is no weed seed in this soil. In about two days the manure will heat, and then we sow early tomato seed, cabbage, and so on through the list of early plants. We also put in one-half bushel of sweet potatoes. The box or hotbed is now covered with heavy canvas.

The best time to sow early plant seeds in this latitude is about the 15th of February. When the plants are large enough we take them out of hotbed and transplant into cold frames, where they are kept and hardened off for the garden. People are anxious to get those early plants, and will pay fancy prices for them. When the first sowing of the bed is exhausted we sow more seed of a later variety; also, when the potatoes begin to weaken in sprout growth we put in more seed, and thus we have something to sell from the hotbed till well along in the spring, and it's a paying proposition, too.

Perhaps the best tomato for extra early planting is the Bonny Best. My next choice is the Early Jewel. For later planting I prefer Success, Stone and Globe.

We sow seed of egg plant about the 10th of March, as we have found that if sown earlier than this it does not do so well.

F. G. D., Richmond, Va.—While most of our attention has been devoted to fruit growing and raising poultry and hogs, we have always managed to sandwich in a watermelon patch as a side line, and for the actual time expended it has proved to be one of our best revenue producers. To eliminate watching the patch, we have always planted it off the main road, in some out-of-the-way place, and, with the exception of one year, we have never been paid a visit by a marauding party. Even that year, when a band of mischievous youngsters entered, the damage was slight.

When the melons ripened they were hauled out mostly on Saturdays or when some special event in the community attracted a crowd, as, for instance, a circus. Sometimes they were sold in wagonload lots to merchants, and while prices were not as good as when disposed of direct to consumers, much valuable time was often saved and melons moved quickly without any loss. While seeds, labor, etc., have increased a great deal in the last two or three years, prices of the melons have also kept pace. In our community the same melon that used to bring from 25 to 30 cents is now bringing from 65 to 85 cents. Also, along with the watermelons a few rows of cantaloupes are always planted, and these have been disposed of even more readily than the former. Rocky Fords especially went like "hot cakes," but all of the smaller types went quickly.

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	Miles		Miles
Arkansas	87	New Jersey	87
California	210	New York	329
Delaware	55	Ohio	239
Georgia	90	Oklahoma	69
Illinois	570	Oregon	42
Indiana	280	Pennsylvania	491
Kansas	69	Texas	59
Maryland	95	Utah	84
Massachusetts	31	Virginia	91
Michigan	169	Washington	161
Minnesota	79	West Virginia	87
Mississippi	38	Wisconsin	132

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E. G., Buchanan, Va.—Our folks are such flower lovers that they never throw away a bulb or plant, so there are flowers in every nook and corner they can find to set one. Last summer some motorists asked leave to lunch on the lawn, and, admiring the flowers, wanted to buy some. This gave us an idea. We decided to start a trade in cut flowers, as well as such roots and plants as we can spare.

The man that markets our produce hasn't "time to fool with flowers," but we made arrangements with a woman, who has a little store at the market, to sell on commission, and she sold all the chrysanthemums we had to spare, and engaged rooted slips for the spring planting. This was the easiest money we ever earned, as the growing and handling of flowers is a pleasure in spite of the work required. We have many early-blooming bulbs and flowers which we plan to market, and are told that even the dogwood and ferns we can gather in the nearby woods will sell readily in our nearest city.

We have found it paid to grow Madonna lily bulbs and gladioli for sale, and now plan to double our profits by selling the cut flowers also. Madonna lilies are easy to propagate, as every scale broken accidentally from a large bulb will form a new one, though it takes several years for it to attain blooming size.

M. C. S., Salem, N. Y.—Our general farming is cows, sheep and apples. We have for many years grown a liberal patch of different varieties of berries, and also a large plat of melons. We are very fond of both, and believe they are healthy; and why not enjoy such a luxury when so easily produced? We set and plant a sufficient amount to be sure and have enough for our use if an unfavorable season comes, but generally have much more than we can use. As we frequently have occasion to visit our county seat—a village of over a thousand population—we have found it delayed but little and paid well to take along our surplus berries and melons. Many do not attempt to grow these for lack of room, know how to care for them, or have too much other business. We find most people appreciate fresh, well-ripened stock, and will readily buy at a good price, rather than go to the market for stocks shipped in that have been gathered before fully ripe and stood around in the dust. This enables us to get acquainted with people, and often leads to sales of other articles of which we often have a surplus. The time spent in this way is a pleasant relaxation from the hard round of farm work.

Subsoiling with Dynamite

W. T. SHELTON

It seems I have made a discovery without realizing I had learned anything at the time I discovered it. This sounds like a paradoxical remark, but the following explanation will make the meaning clear:

Several years ago I purchased ten acres of stump land. It was worth very little, as the stumps were so thick it couldn't be farmed. As I wanted to use it for a hay field, I bought 350 pounds of dynamite and blasted off the stumps.

I knew very little about using dynamite, never having had any experience, and I didn't have the right kind of tools either. I simply used a grubbing hoe to make a hole about a foot deep alongside of the stump; then used a white oak pointed stake, which was driven with a sledge at an angle under the stump so as to properly center the charge of dynamite under it. The greatest difficulty was to pull the stake out after driving it in. However, this was accomplished by means of a rope and team.

However, it wasn't the stump blasting that I set out to tell you about. I sowed redtop on this field after clearing it. After it had attained a good growth I noticed an unevenness all over the field. The growth was very satisfactory everywhere, but at certain places the grass grew much higher and thicker than at other points. I didn't know why that was, and never connected it in any way with the stump blasting, because I had at that time never heard of subsoiling with dynamite. It wasn't until the past summer that I learned the reason. A salesman came through this section who knew about the use of dynamite in subsoiling. As soon as I showed him my field and called his attention to the unevenness of the growth, he immediately asked me if I had used dynamite to clear off the stumps. When I told him that I had, he said that accounted for the phenomenon—that the dynamite planted in the subsoil under the stumps had broken up the red clay, aerating and draining it and increasing its water-storage capacity, in other words, so improving its mechanical condition as to cause a denser and heaver growth at the points where the work has been done.

Since learning this I am convinced that the blasting of our red clay subsoils would make our fields bear heavier crops. *Virginia.*

Printed stationery gives a business air to the farm, and helps to make a good impression.

A Good Painting Suggestion

An amateur painter cannot avoid getting some paint on the hardware, such as locks, hinges, handles, pulls, etc. This gives the finished job a botched appearance, and partly spoils the effect of the new coat of paint. Here is a little trick of the painter's trade that will overcome this difficulty. Before beginning to paint the woodwork, apply a coating of vaseline to the hardware. Let the paint dry thoroughly, then wipe the vaseline off the metal parts, and the paint will come off with it. This insures a neat, clean job of which the painter may be proud.

The onion growers of Frio, Texas, representing 500 acres of onions, have formed a pool to buy onion crates for the 1920 season. Since the prices of apple barrels and spray materials have gone to such dizzy heights, eastern orchard men might take a tip from Texas.

Blue Buckle Over Alls

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IF you really want better money's worth in work-clothes *get right into Blue Buckle Over Alls and Coats!* Blue Buckles give you more comfort because of their generous oversize. This roominess means longer wear at strain points.

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

APRIL 15.—A change of season always means a change of clothes for the family. In these days of expensive fabrics this means a good bit. Maybe your ingenuity has devised a way to save money on clothing, especially for the children. Tell us some of your methods, so we can all benefit by them.

MAY 1.—"Beds and Bedding' has been suggested by one of our contributors as a suitable topic for discussion. Considering that even the healthiest of us spend about one-third of our life in bed, there ought to be something to say on this subject. Whatever your opinion is, please don't express it in more than 300 words.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

When the Vegetables Reach the Table

Mrs. C. B., Conneautville, Pa.—There is no other vegetable that can be grown in the garden that will give more food value, the entire year, than peas. They are easily grown, and will grow in any kind of soil. I choose the soil that is loose and quite rich, and use a quantity of commercial fertilizer and work this in the ground. I plant two varieties, an early and a late. The bush pea is usually the early, and the Telephone and the Champion of England are the best later varieties. They produce peas of larger and better quality for canning. Several plantings can be made from early May till late August.

We can the peas when they are ready for table use, care being taken not to let them become too ripe. They are then scalded from two to five minutes, and afterward dipped in cold water to retain their color. Pack them in Mason jars, leaving a small space at the top of the jar. Add cold water till jar is full, also a teaspoonful of salt to each quart. The rubbers and tops are then put on and partially tightened; cook in hot water bath for one and a half hours; remove the jars and tighten the lids, and they are then ready to put away.

I have canned by this process for several years, and have yet to lose the first jar. When wanted to prepare for the table, strain the peas from the water in the jar, and cover with milk, season with salt, pepper and a teaspoonful of sugar. This makes a nice vegetable for winter use, and very cheap when one cans from their own garden.

Mrs. A. B., West Valley, N. Y.—With the exception of potatoes, I believe onions have the most uses and help to make more palatable dishes than any other vegetable. I cannot say about the real food value, but what cook would think she could serve appetizing meals for even a short time without onions? Onions are good boiled, fried or roasted, served with mashed potatoes; and soups, salads and dressings would be flat indeed without a touch of onion flavor.

They take a satisfying place in my family in the place of pickles. Slice raw, turn boiling water over them, and after standing about five minutes turn off the water, sweeten slightly, and cover with vinegar—not too strong. Mixed pickles, pickled onions, etc., also help our menu.

For the home garden, set the onion sets in rows far enough apart for a hand cultivator to be run through. The soil should be a fine loam, and the weeds kept out by hand. The earth is kept back from the onions after they begin to bottom, so that they stand partially out of the ground.

Mrs. E. S., Harveysburg, Ohio.—We find that beans give our table the largest amount of food, next to potatoes. We plant Stringless Green Pod for summer green beans early and in succession to have them all summer. Prolific Bunch lima for the earliest butter beans are heavy producers and are fine gathered as soon as they will shell, and can be dried for winter. Navy or soup beans we would find difficult to do without for soups and baking. These all require to be planted about the same, in good garden soil, in rows two and a half or three feet apart, kept clear of weeds, being careful never to cultivate when vines are wet.

We plant tall butter beans, which we plan will furnish all the large butter beans for winter use, besides giving many in season. These are particularly fine served without the skins. Let them soak over night. In the morning, slip off the skins, and cook about thirty minutes. Then remove to cups or individual dishes, and season with butter, pepper and salt. Have water to almost cover. Set in a pan of water, cover, and place in moderate oven. They will thus cook without falling apart, and are most delicious. We do not object to them falling apart, so I often just cook all in one dish. We think no other beans equal this way of serving. The Corn Hill or Cut Short are planted in the corn. These we prize most for fall use and canning; none others keep so well or are so rich in food value. We use almost no meat beans. Being the best suited to supply the required food, we see that the best are provided.

Mrs. C. H., Aspers, Pa.—So many people hold aloof from the egg plant, and upon inquiry I find that 95 per cent. of the people know of no way to use them but to fry them, and prepared in this way they are too rich for lots of stomachs. There are various ways of preparing them. They make splendid soup, are fine escalloped, but the way we prefer them is baked.

I raise them by the bushel, and can them for winter use. To bake I cut them in small pieces, and stew in slightly salted water. Then I take two sweet peppers, chopped fine, one onion, a pint of tomatoes, one cupful ground meat, either fresh or smoked (we prefer smoked), and a pint of bread crumbs. Place in layers in a baking dish, let the top layer be crumbs and generous dots of butter, bake about forty minutes or more, and you have a dish fit for a king.

Mrs. G. S. D., Denton, Md.—It is hard to decide between sweet corn and peas, but I think possibly the peas do give more in food value, and perhaps we eat more of them.

To succeed with peas the land must be rich and moist, but never sour, and the first early smooth peas can be put in as soon as there is no more danger of the ground freezing. We do not care for many of the smooth peas; the wrinkled earlies can follow so closely we want no more smooth ones after the first. Peas should be sowed thickly in the rows, for they never seem to do well if they do not make a close row. Keep clean of weeds till the bloom comes, but do not touch them while wet.

We cook peas the simplest way, but season and serve in a way of our own. Put on in just enough boiling water to show among the peas (preferably pour the peas into the dish of boiling water), add one or two teaspoonfuls of sugar, boil fast fiften or twenty minutes, then add salt, butter and cream or rich milk, retaining the water in which they were boiled, let come to boil, and serve in a soup plate or oatmeal dish, with bread crumbed into the gravy as you eat. This makes the main dish of the meal with us—not very hearty, but a real treat when it is warm and you are tired and have lost your appetite for heavy foods. The addition of a nice cold pudding or ice cream makes quite a satisfying meal for a change from the old potatoes and too hearty meal.

Mrs. M. J., Princess Anne, Md.—The vegetable that we find gives us the largest amount of food for the table, after potatoes—and I can't except any other—is lima beans, or butter beans, as they are commonly called in this section. We plant two kinds, the bush limas for early, and the pole limas, which come in a little later, these beginning to bear in August and continuing to blossom and bear until killed by frost some time in November. We usually plant about 150 hills of this kind, and they supply our table with an abundance every day throughout the season. When killed by frost we pick off the dried ones, and have enough to last us all winter.

We prepare the ground by covering it with barnyard manure early in the spring. We plow and harrow the ground as soon as it is dry enough to work, and then set in the poles 3½ feet each way. We plant the beans any time from the 1st to the 10th of May, depending on the season, putting five beans to the hill. After they get a good start we thin to three plants, which is enough for one pole. I forgot to state that just before planting the beans we sprinkle around in each hill a handful of good, high-grade fertilizer and work it in well. Keep the beans well cultivated and free from weeds.

Bean loaf is a nice way to prepare them in winter, for a change. Soak two cupfuls of beans over night, and in the morning boil until tender. Then mash through a collander, and add to this pulp one tablespoonful of butter, two cupfuls of fine bread crumbs, one egg, and salt and pepper to taste. Press this mixture into a well-buttered pan, and bake for half an hour. This is nice eaten with tomato sauce or baked tomatoes.

Miss M. A. C., Newtown Square, Pa.—Of the many vegetables raised in the garden, excepting potatoes and tomatoes, I think sweet corn gives the greatest amount of food for the table. It not only serves as a vegetable, but also as a substitute for meat, and can be eaten each day without tiring of it. As a vegetable we boil it, bake it on the cob or cut off, fry it, and make chowder and succotash.

Succotash is made by taking one dozen ears of corn, cutting tips off and scraping out the rest. Put cobs and a pint of lima beans in barely enough water to cover, and boil moderately until the beans are tender. Then take out the cobs and put in the corn, and boil ten minutes. Season with salt, pepper, butter and one-half cupful of cream.

We also make pudding, which is made by grating the corn from six large ears, using three eggs (two will do), salt and sugar to taste and one tablespoonful of butter. Butter the pudding dish or casserole, and put in the mixture, and bake in a moderate oven until well set. It is most delicious.

As a substitute for meat we make corn oysters and corn fritters, which, when properly made, are enjoyed as a change as much as meat. This is our way of making corn oysters: Grate or cut tips off, and scrape out the rest, and to a pint of corn add one well-beaten egg, one scant cupful of flour, one cupful of milk and one teaspoonful of salt. Mix well, and drop the size of an oyster in hot fat, and fry to a delicate brown. They are fine.

A. B. L., White River Junction, Vt.—We consider carrots the best vegetable, aside from potatoes, that can be raised in the garden. Carrots are considered by physicians as very healthful and excellent for children and one of the first vegetables that should be given them.

Cook until tender, then peel and slice, and add cream and salt, and just bring to a boil, and see how delicious they are. We can them for spring and summer use, as they are never so good and tender after they start to grow in the cellar, which they are sure to do before spring. They add much to a vegetable soup made by using soup stock with a little of the meat put through meat cutter, two carrots, two potatoes, two onions and half a turnip. Put all through a meat cutter raw, and cook one or two hours.

Carrots are excellent in a pudding. Use one cupful raw carrots, one cupful raw potatoes and one cupful raisins. Measure all after putting through meat cutter. Then add one cupful sugar, one cupful flour, one teaspoonful soda, a little cloves and salt. Steam three hours in covered dish or pail, and serve with whipped cream.

This is a new and most excellent recipe for carrot marmalade: Five pounds carrots, washed and scraped and put through food chopper. Cook until tender in just water enough to cover. Ten lemons, ground fine in food chopper. Use all but the seeds. Cook in another kettle till tender. Then put together, and mix one cupful sugar to every cupful of this mixture; one box of preserved ginger, soaked in hot water and ground fine. Put all together, and simmer several hours until transparent.

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Plays Any Disc Record Up to 7 in. and plays them properly. This machine is simply wonderful—not to be compared with any other of this kind. Will give you more entertainment than anything you ever owned. Strong and durable. Small and compact with no parts to get out of order.

EVERY MACHINE REGULATED AND TESTED before it leaves the factory and guaranteed in every way. A real phonograph, not a toy, yet small and light enough to be carried to camps, excursions, etc. Gives a clearness and volume of tone not surpassed by most high-priced instruments.

TESTIMONIAL Cerro Gordo, N. C., Sept. 12, 1918. Dear Company—I have just today received my Phonograph—and must tell you for a fact I am more than delighted with it. Many, many thanks for your honesty. I remain your friend till death. Mrs. Fannie Rogers, Cerro Gordo, N. C.

FREE TO YOU-SEND NO MONEY Just your name and we will send you 24 of our Art Pictures to dispose of on special offer at 25c each. Send us the $6 you collect and for your trouble we will send this new improved E. D. L. Phonograph and a selection of 6 records, free for your trouble. You can dispose of pictures and earn this great machine and the records in a few hours' time. Address

E. D. LIFE, 337 W. Madison St., 3T9 CHICAGO

What Our Farm Women Ask and Answer

"I have very tender feet," says one of our New York contributors, "and in these days of high-priced footwear would like to hear what some of THE PRACTICAL FARMER readers find to be the most comfortable and economical for everyday and dress shoes."

"A pretty pink cake may be made by any white cake recipe, using a cupful of red raspberry or blackberry juice instead of the milk or water called for in recipe," says Mrs. O. J., Rio, La.

"I wish," writes A. B. L., from Vermont, "one of THE PRACTICAL FARMER readers would tell us some new and novel way of using silk and velvet pieces to make a quilt. We are tired of the old style of crazy patchwork."

Homespun Yarn from Ithaca

One bar of laundry soap plus a quart of water plus one teaspoonful of turpentine and heated until the soap has dissolved makes a good soap jelly.

Ever try a brush for greasing pans, brushing rolls or pastry with butter, egg or milk? A brush in which the bristles are glued cannot be used, because this kind will not stand cleaning with boiling water.

Some kitchens just happen; others are planned. Which kind do you work in? Bulletin H. 108 may have some hints which will make your work easier. Why not write the state college at Ithaca, N. Y., for a copy?

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9529.—Ladies' blouse. Cut in sizes 36 to 44 inches bust measure. As the pattern is perforated for three lengths, there is a choice between the long, short and medium length.

9029.—Ladies' dress. Cut in sizes 36 to 46 inches bust measure. This simple frock crosses its fronts in surplice effect.

8931.—Ladies' waist. Cut in sizes 36 to 44 inches bust measure. Like most of the new blouses this season, this one fastens on the shoulders.

9578.—Boys' suit. Cut in sizes 8 to 14 years. An excellent style for a boys' spring Norfolk suit of navy blue serge is illustrated.

8975.—Girls' dress. Cut in sizes 6 to 14 years. A splendid type for gingham cuts its surplice waist to form a girdle at the back.

9050.—Ladies' apron. Cut in sizes 36, 40, 44 and 48 inches bust measure. The short sleeves are cut in one with the apron.

9523.—Ladies' circular skirt. Cut in sizes 26 to 36 inches waist measure. This new model may be made with two, three or four gores.

9519.—Ladies' and misses' skirt. Cut in sizes 16 and 18 years, and 26 to 30 inches waist measure. Pockets are set on at each side to give the wide hipline that is so popular just now.

9605.—Ladies' and misses' dress. Cut in sizes 16 years, and 36 to 42 inches bust measure. The shoulder edges of the back extend over the fronts in shallow yoke effect.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

You Are Welcome

To This Ten-Day Test

All Statements Approved by High Dental Authorities

See What it Does for Your Teeth

This is to urge a ten-day test of a new, scientific tooth cleaner.

You have found, no doubt, that brushed teeth still discolor and decay. The methods you use are inadequate. There is now a better way.

The cause of most tooth troubles is a film. It is ever-present, ever-forming. You can feel it with your tongue.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

That film is clinging. It gets into crevices and stays.

So, despite your brushing, it may do a ceaseless damage. Teeth are safer, whiter and cleaner if that film is absent.

Science Now Combats It

Dental science, after years of searching, has found a way to combat film. Years of careful tests under able authorities have amply proved its efficiency. Now leading dentists all over America are urging its adoption. It is now used daily on millions of teeth.

This film combatant is embodied in a dentifrice called Pepsodent. And a 10-Day Tube is offered to every home for testing.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

For long this method seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And that discovery opens a new teeth-cleaning era.

The results are quickly apparent. A ten-day test is convincing. We urge you to make it at our cost and learn what clean teeth mean. Lest you forget, cut out the coupon now.

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Now advised by leading dentists. Druggists everywhere are supplied with large tubes.

Look in Ten Days

Make this ten-day test. Note how clean teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. In ten days let your own teeth tell you what is best.

Ten-Day Tube Free

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SUNNY SLOPES

By Ethel Hueston

Copyright, 1917
The Bobbs-Merrill
Company

Author of Prudence of the Parsonage, etc.

CHAPTER XII—Continued

Barrows rushed up as rapidly as circumstances permitted, and looked eagerly inside.

"It is my turn," he said reproachfully. "You are not playing fair. I say we submit this to arbitration. You had first shot at Miss Landbury, didn't you?"

"I am not a nigger baby at a country fair, three shots for ten cents," interrupted Nancy resentfully. But when the others laughed at her ready sally, she joined in good naturedly.

"You don't look like a lunger," said Barrows, eyeing her critically.

"Mr. Duke thinks I came out for the benefit of my disposition."

"Good idea." Nevius jerked a notebook from his pocket and made a hurried notation.

"Taking notes for a sermon?" asked Carol.

"No, for a sickness. That's where I'll get 'em next. I hadn't thought of the disposition. Thank you, thank you very much. I'll have it tomorrow. Bugs in the disposition—sounds medical, doesn't it?"

"Oh, don't, Mr. Nevius," entreated Carol. "Don't get anything the matter with your disposition. We don't care where else you collect them, as long as you keep on making us laugh. But, woodman, spare that disposition."

Nevius pulled out the notebook and crossed off the notation. "There it goes again," he muttered. "Women always were a blot on the escutcheon of scientific progress. Just to oblige you, I've had to forego the pleasure of making a medical curiosity of myself. Well, well. Women are all right for domestic purposes, but they sure are a check on science."

"They are a check on your bankbook, too, let me tell you," said Barrows quickly. "I never cared how much my wife checked me up on science, but when she checked me out of three bank accounts, I drew the line."

"Speaking of death," began Nevius suddenly.

"Nobody spoke of it, and nobody wants to," said Carol.

"Miss Tucker suggests it by the forlornity of her attitude. And since she has started the subject, I must needs continue. I want to tell you something funny. You weren't here when Reddy Waters croaked, were you, Duke? He had the cottage next to mine. I was in bed at the time with—well, I don't remember where I was breaking out at the time, but I was in bed. You may have noticed that I have what might be called a classic pallor and a general resemblance to a corpse."

Nancy shivered a little, and Carol frowned, but Nevius continued imperturbably. "The undertaker down town is a lunger, and a nervous wreck to boot. But he is a good undertaker. He works hard. Maybe he is practicing up so he can do a really artistic job on himself when the time comes. Anyhow, Reddy died. They always come after them when the rest of us are in at dinner. It interferes with the appetite to see the long basket going out. So when the rest were eating, old Bennett comes driving up after Reddy. It was just about dark, that dusky, spooky time when the shadows come down from the mountains and cover up the sunny slopes you preachers rave about. So up comes Bennett, and he got into the wrong cottage. First thing I knew, someone softly pushed open the door, and in walked Bennett at the front end of the long basket, the assistant trailing him in the rear. I felt kind of weak, so I just laid there until Bennett got beside me. Then I slowly rose up and put out one cold, clammy hand and touched his. Bennett choked, and the assistant yelled, and they dropped the basket and fled. I rang the bell and told the nurse to make that crazy undertaker come and get the right corpse that was patiently waiting for him, and she called him on the telephone. Nothing doing. A corpse that didn't have any better judgment than that could stay in bed until doomsday for all of him. So they had to get another undertaker. But Bennett told her to get the basket and he would send the assistant after it. But I held it for ransom, and Bennett had to pay me two dollars for it."

His auditors wiped their eyes, half ashamed of their laughter.

"It is funny," said Nancy Tucker, "but it seems awful to laugh at such things."

"Awful! Not a bit of it," declared Barrows. "It's religious. Doesn't it say in the Bible, 'Laugh and the world laughs with you; die and the world laughs on'?"

"I laugh—but I am ashamed of myself," confessed Carol.

"What do women want to spoil a good story for?" protested Nevius. "That's a funny story, and it is true. It is supposed to be laughed at. And Reddy is better off. He had so many bugs you couldn't tell which was bugs and which was Reddy. He was an ugly guy, too, and he was stuck on a girl, and she turned him down. She said Reddy was all right, but no one could raise a eugenical family with a father as ugly as Reddy. He didn't care if he died. Every night he used to flip up a coin to see if he would live till morning. He said if he got off ahead of us he was coming back to haunt us. But I told him he'd better fly while the flying was good, for I sure would show him a lively race up to the rosy clouds if I ever caught up. I knew if he got there first he'd pick out the best harp and leave me a wheezy mouth-organ. He always wanted the best of everything."

Just then the nurse opened the door. "Barrows and Nevius," she said sternly. "This is the rest hour, and you are both under orders. Please go home at once and go to bed, or I shall report to Mrs. Hartley." When they had gone, she looked searchingly into the face of the brand new chaser. "How are you feeling now?" she asked.

"Oh, pretty well." And then she added, honestly: "It really isn't as bad as I had expected. I think I can stand it a while."

"Have you caught a glimpse of the sunny slopes yet?"

Instinctively they turned their eyes to the distant mountains, with the white crown of snow at the top, and beneath, long radiating lines of alternating light and shadow stretching down to the mesa.

"The shadows look pretty dark," she said, "but the sunny slopes are there all right. But I was happy at home; I had hopes and plans——"

"Yes, we all did," interrupted David quickly. "We were all happy, and had hopes and plans, and—— But since we are here and have to stay, isn't it God's blessing that there is sunshine for us on the slopes?"

CHAPTER XIII

OLD HOPES AND NEW

Along toward the middle of the summer Carol began eating her meals on the porch with David, and they fixed up a small table with doilies and flowers, and said they were keeping house all over again. Sometimes, when David was sleeping, Carol slipped noiselessly into the room to turn over with loving fingers the soft woolen petticoats, and bandages, and bonnets, and daintily embroidered dresses—gifts of the women of their church back in the Heights in St. Louis.

About David the doctors had been frank with Carol.

"He may live a long time and be comfortable and enjoy himself. But he will never be able to do a man's work again."

"Are you sure?" Carol had taken the blow without flinching.

"Oh, yes. There is no doubt about that."

"What shall I do?"

"Just be happy that he is here and not suffering. Love him, and amuse him, and enjoy him as much as you can. That is all you can do."

"Let's not tell him," she suggested. "It would make him so sorry."

"That is a good idea. Keep him in the dark. It is lots easier to be happy when hope goes with it."

But long before this David had looked his future in the face. "I have been set aside for good," he thought. "I know it; I feel it. But Carol is so sure I will be well again. She shall never know the truth from me."

When Carol intensely told him he was stronger, he agreed promptly and said he thought so himself.

"Oh, blessed old David, I'm so glad you don't know about it," thought Carol.

"My sweet little Carol, I hope you never find out until it is over," thought David.

Sometimes Carol stood at the window when David was sleeping, and looked out over the long mesa to the mountains. Her gaze rested on the dark, heavy shadows of the canyons. To her those dark valleys in the mountains represented a buried vision—the vision of David, strong and sturdy again, springing lightly across a tennis court; walking briskly through mud and snow to conduct a little mission in the Hollow; standing tall and straight and sunburned in the pulpit, swaying the people with his fervor. It was a buried hope, a shadowy canyon. Then she looked up to the sunny slopes, stretching bright and golden above the shadows up to the snowy crest of the mountain peaks. Sunny slopes—a new hope rising out of the old and towering above it. And then she always went back to the chest in the corner of the room and fingered the tiny garments, waiting there for service, with tender fingers.

And once in a while, not very often, David would say, smiling: "Who knows, Carol, but you two may some day do the things we two had hoped to do?"

A few weeks later Aunt Grace came out from Mount Mark, and in her usual soft, gentle way drifted into the life of the chasers in the sanatorium. She told of the home, of William's work and tireless zeal, of Lark and Jim, of Fairy and Babbie, of Prudence and Jerry. She talked most of all of Connie.

"That Connie! She is a whole family all by herself. She is entirely different from the rest of you. She is unique. She doesn't really live at all; she just looks on. She watches life with the cool, critical eyes of a philosopher and a stoic and an epicure all rolled into one. She comes, she sees, she draws conclusions. William and I hold our breath. She may set the world on fire with her talent, or she may become a demure little old maid, crocheting jabots and feeding kittens. No one can foretell Connie."

And Carol, in a beautiful, heavenly relief at having this blessed outlet for her pent-up feelings, reclined in a big rocker on the porch, and smiled at Aunt Grace, and glowed at David, and declared the sunny slopes were so brilliant they dazzled her eyes.

There came a day when she packed a suitcase, and petted David a little, and gave him very strict instructions as to how he was to conduct himself in her absence, and went away over to the other building, and settled down in a pleasant upstairs room with Aunt Grace in charge. For several days she lounged there quietly content, gazing for hours out upon the marvelous mesa land, answering with a cheery wave the gay greetings shouted up to her from chasers loitering beneath her windows.

But one morning she watched with weary, throbbing eyes as Aunt Grace and a nurse and a chambermaid carefully wrapped up a tiny pink flannel roll for a visit to Room No. 6 in the McCormick Building.

"Tell him I am just fine, and it is a lucky thing that he likes girls better than boys, and we think she is going to look like me. And be particularly sure to sell him she is very, very pretty; the doctor and the nurse both say she is—David might overlook it if his attention were not especially called to it."

Three weeks later the suitcase was packed once more, and Carol was moved back across the grounds to No. 6 and David, where already little Julia was in full control.

"Aren't you glad she is pretty, David?" demanded Carol promptly. "I was so relieved. Most of them are so red and frowsy, you know. I've seen lots of new ones in my day, but this is my first experience with a pretty one."

The doctor and the nurse had the temerity to laugh at that, even with Julia, pink and dimply, right before them. "Oh, that old, old story," said the doctor. "I'm looking for a woman who can class her baby with the others. I intend to use my fortune erecting a monument to her if I find her—but the fortune is safe. Every woman's baby is the only pretty one she ever saw in her life."

Carol and David were a little indignant at first, but finally they decided to make allowances for the doctor—he was old, and of course he must be tired of babies, he had ushered in so many. They would try and apply their Christian charity to him, though it was a great strain on their religion.

But what should be done with Julia? David was so ill, Carol so weak, and the baby so tender. Was it safe to keep here there? But could they let that little rosebud go?

"Why, I will just take her home with me," said Aunt Grace gently. "And we'll keep her until you are ready. Oh, it won't be a bit of trouble. We want her."

That settled it. The baby was to go.

"For once in my life I have made a sacrifice," said Carol grimly. "I think I must be improving. I have allowed myself to be hurt, and crushed, and torn to shreds, for the good of someone else. I certainly must be improving."

Later she thought: "She will know all her aunties before she knows me. She will love them better. When I go home she will not know me, and will cry for Aunt Grace. She will be afraid of me. Really, some things are very hard." But to David she said that of course the doctors were right, and she and David were so old and sensible that it would be quite easy to do as they were bid. And they were so used to having just themselves that things would go on as they always had.

But more nights than one she cried herself to sleep, craving the touch of the little rosebud baby learning of motherhood from someone else.

CHAPTER XIV

NEPTUNE'S SECOND DAUGHTER

"Chicago, Illinois.

"Dearest Carol and David:—

"Carol, dear, an awful thing has happened. Do you remember the millionaire's son who discovered me up the cherry tree years ago when I was an infant? He comes to see me now and then. He is very nice and attentive, and all of my friends have selected the color schemes for their boudoirs in my forthcoming palatial home. One night he telephoned and said his mother was in town with him, and they should like to come right up if I did not mind. I did not know he was in town, I hardly knew he had a mother, and I was in the act of shampooing my hair. Phyllis was making candy, and Gladys was reading aloud to us both. Imagine the mother of a millionaire's son coming right up, and I in a shampoo.

"'Oh,' I wailed, 'I haven't anything to wear, and I am not used to millionaires' sons' mothers, and I won't know what to say to her.'

"'Leave it to us, Connie!' cried my friends valiantly.

"Gladys whirled the magazine under the bed, and Phyllis turned out the electricity under the chafing-dish and put the candy in the window to finish at a later date.

"Did I tell you about our housekeeping venture? Gladys is a private secretary to something down town, and gets an enormous salary, thirty a week. Phyllis is an artist, and has a studio somewhere, and we are great friends. So we took a cunning little apartment for three months, and we all live together, and cook our meals in the baby kitchenette when we feel domestic, and dine out like princesses when we feel lordly. We have the kitchenette, and a bathroom with two kinds of showers, and a bedroom apiece, though mine is really a closet, and two sitting-rooms, so two of us can have beaus the same night. If we feel the need of an extra sitting-room—that is, three beaus a night—we draw cuts to see who has to resort to the park, or a movie, or the ice cream parlor, or the kitchenette. Our time is up next week, and we shall return modestly to our boarding-houses. It is great fun, but it is expensive, and we are so busy.

"We have lovely times. The girls are—not like me. They are really society buds, and wear startling evening gowns, and go places in taxis, and are quite the height of fashion. It is a wonder they put up with me at all. Still, every establishment must have at least one Cinderella. But let me admit honestly and Methodistically that I do less Cinderelling than either of them. Gladys darns my stockings, and Phyllis makes my bed fully half the time.

"Anyhow, when Andrew Hedges, millionaire's son, telephoned that his mother was coming up, they fell upon me, and one rubbed and one fanned, and they both talked at once, and in the end I agreed to leave myself in their hands. They knew all about millionaires' sons' mothers, it seemed, and would fix me up just exactly O. K. right. Gladys and I are the same size, and she has an exquisite semi-evening gown of Nile green and honest-to-goodness lace which I have long admired humbly from my corner among the ashes. Just the thing! I should wear it, and make the millionaire's son's mother look like twenty cents.

"Wickedly and wilfully I agreed. So when the hair was dry enough to manage, they marched me into Gladys' room—the only one of the three capable of accommodating three of us—and turned the mirrors to the wall. I protested at that. I wanted to see my progress under their skilful fingers.

"'No,' said Phyllis sagely. 'It looks horrible while it is going on. You must wait until you are finished, and then burst upon your own enraptured vision. You will enchant yourself.'

"Gladys seconded her, and I assented weakly. I know I am not naturally weak, Carol, but the thought of a millionaire's son's mother affected me very strangely. It took all the starch out of my knees, and the spine out of my backbone.

"By this time I was established in Gladys' green slippers with shirestone buckles, and Gladys was putting all of her own and Phyllis' rings on my fingers, and Phyllis was using a crimping iron on my curls. I was too curly already, but Phyllis said natural curliness was not the thing any more. Then Gladys began dabbing funny sticky stuff all over my fingers, and scratching my eyebrows, and powdering about twenty layers on my face and throat. After that she rubbed my finger nails until I could almost see what they were doing to me. I never thought I had much hair, but when Phyllis got through with me I could hardly carry it. The ladies in Hawaii who carry bushel baskets on their heads will tell you how I felt. And whenever I moved it wabbled. But they both clapped their hands, and said I looked like a dream, and of course I would have acquired another bushel had they advised it.

"I trusted them because they look so wonderful when they are finished—just right—never too much so.

"Our bell rang then, and Phyllis answered and said: 'Tell them Miss Starr will be in in a moment.'

"There is a general apartment maid, and when we wish to be very perfectly fine we borrow her—for a quarter.

"When I knew they had arrived, I leaped up panic stricken, and dived head first into that pile of Nile green silk and real lace. They rescued me tenderly, and pushed me in, and hooked me here, and buttoned me there, both panting and gasping. I madly hurrying them on, because I can't get over that silly old parsonage notion that it isn't good form to keep folks waiting.

"'There you are,' cried Gladys.

"'Fly,' shouted Phyllis.

"Out I dashed, recollected myself in the bathroom, and—yes, I did that foolish thing, Carol. Your vanity would have saved you such a blunder. But I tore myself from their blood-stained hands, and went in to meet a millionaire's son's mother without looking myself over in the mirror.

"When I parted the curtains, Andy leaped to his feet with his usual quick eagerness, but he stopped abruptly, and his lips as well as his eyes widened.

"'How do you do?' I said, moistening my lips, which already felt too wet, only I didn't know what was the matter with them. I held out my hand, unwontedly white, and he took it flabbily, instead of briskly and warmly as he usually did.

"'Mother,' he said, 'I want you to meet Miss Starr.'

"She wasn't at all the kind of millionaire's son's mother we have read about. She had no lorgnette, and she did not look me over superciliously. But she had turned my way as though confident of being pleased, and her soft eyes clouded a little, though she smiled sweetly. Her hair was silver white, and curled over her forehead and around her ears. She had dimples, and she stuck her chin up like a girl when she laughed. She wore the softest, sweetest kind of a wistaria-colored silk. I was charmed with her. It could not have been mutual.

"She held out her hand, smiling so gently, still with the cloud in her eyes, and we all sat down. She did not look me over, though she must have yearned to do so. But Andy looked me over thoroughly, questioningly, from the rhinestone pin at the top of the swaying hair, to the tips of my Nile green shoes. I tried to talk, but my hair wabbled so, and little invisible hair pins kept visibleing themselves and sliding into my lap and down my neck, and my lips felt so moist and sticky, and my skin didn't fit like skin, and—still I was determined to live up to my part, and I talked on and on, and—then, quite suddenly, I happened to glance into a mirror beside me. There was someone else in the room; someone in a marvelous dress, with a white-washed throat, with lips too red, and cheeks too pink, and brows too black; someone with an unbelievable quantity of curls on top of her—and I turned around to see whom it might be. Nobody there. I looked back to the mirror. I was not dreaming—of course there was someone in the room. No, the room was empty save we three. I turned suspiciously to Mrs. Hedges. She was still in her place, a smiling study in wistaria and silver gray. I looked at Andy. Immaculate in black and white. Then—sickening realization!

"I stood up abruptly. The atrocity in the mirror rose also.

"'That isn't I,' I cried imploringly.

"Mrs. Hedges looked startled, but Andy came to my side at once.

"'No, it certainly isn't,' he said heartily. 'What on earth have you been doing to yourself, Connie?'

"I went close to the mirror, inspecting myself, grimly, piteously. I do not understand it to this day. The girls do the same things to themselves, and they look wonderful—never like that.

"I rubbed my lips with my fingers, and understood the moisture. I examined my brows, and knew what the scratching meant. I shook the pile of hair, and a shower of invisible hair pins rewarded me. I brushed my fingers across my throat, and a cloud of powder wafted outward.

"What does it say in the Bible about the way of the unrighteous? Well, I know just as much about the subject as the Bible does, I think. For a time I was speechless. I did not wish to blame my friends. But I could not bear to think that anyone should carry away such a vision of one of father's daughters.

"'Take a good look at me, please,' I said, laughing, at last, 'for you will never see me again. I am Neptune's second daughter. I stepped full grown into the world tonight from the hands of my faithless friends. Another step into my own room, and the lovely lady is gone forever.'

"Andy understands me, and he laughed. But his mother still smiled the clouded smile.

"I hurled myself into the depths of self-abasement. I spared no harsh details. I told of the shampoo, and the candy on the window ledge, the magazine under the bed. Religiously I itemized every article on my person, giving every one her proper due. Then I excused myself and went upstairs. I sneaked into my own room, removed the dream of Nile green and lace, and jumped up and down on it a few times, in stocking feet so the girls would not hear, and relieved my feelings something. I think I had to resort to gold dust to resurrect my own complexion—not the best in the world, perhaps, but mine, and I am for it. I combed my hair. I donned my simple blue dress—cost four fifty, and Aunt Grace made it. I wore my white kid slippers and stockings. My debut—ever hear the word?—was worth the exertion. Andy's face shone as he came to meet me. His mother did not know me.

"'I am Miss Starr,' I said, 'the one and only.'

"'Why, you sweet little thing,' she said, smiling without the cloud.

"We went for a long drive, and had supper down town at eleven o'clock, and she kept me with her at the hotel all night. It was Saturday. I slept with her, and used all of her night things and toilet articles. I told her about the magnificent stories I am going to write some time, and she told me what a darling Andy was when he was a baby, and, between you and me, I doubt if they have a million dollars to their name. Honestly, Carol, they are just as nice as we are.

"They stayed in Chicago three days, and she admitted she came on purpose to get acquainted with me. She made me promise to spend a week with them in Cleveland when I can get away, and she gave me the dearest little pearl ring to remember her by. But I wonder—I wonder—— Anyhow, I can't tell him until he asks me, can I? And he has never said a word. You know yourself, Carol, you can't blurt things out at a man until he gives you a chance. So my conscience is quite free. And she certainly is adorable. Think of a mother-in-law like that—pink and gray, with dimples! Yes, she is my ideal of a mother-in-law. I haven't met 'father' yet, but he doesn't need to be very nice. A man can hide a hundred faults in one fold of a pocketbook the size of his.

"Lots of love to you both—and you write to Larkie oftener than you do to me, which isn't fair, for she has a husband and a baby and is within reaching distance of father, and I am an orphan and a widow and a stranger in a strange land.

"But I love you anyhow.

"CONNIE."

CHAPTER XV

THE SECOND STEP

They sat on canvas chairs on the sand outside the porch of the sanatorium, warmly wrapped in rugs—for the summer evenings in New Mexico are cold—and watched the shadows of evening tarnish the gold of the mesa. Like children, they held hands under the protecting shelter of the rug. They talked of little Julia, off in Mount Mark—how she was growing, the color of her eyes, the shape of her fingers. They talked of her possible talents, and how they could best be developed, judging as well as they could in advance by the assembled qualities of all her relatives. David suggested that they might be prejudiced in her favor a little, for as far as they could determine there was no avenue of ability closed to her, but Carol stanchly refused to admit the impeachment. They talked of the schools best qualified to train her, of the teachers she must have, of the ministers they must demand for her spiritual guidance. They talked of the thousand bad habits of other little girls, and planned how Julia should be led surely, sweetly by them.

Then they were silent, thinking of the little pink rosebud baby as she had left them.

The darkness swept down from the mountains almost as sand storms come, and Carol leaned her head against David's shoulder. She was happy. David was so much better. The horrible temperature was below ninety-nine at last, and David was allowed to walk about the mesa, and his appetite was ravenous. Maybe the doctors were wrong, after all. He was certainly on the highroad to health now. She was so glad David had not known how near the dark valley he had passed.

David was rejoicing that he had never told Carol how really ill he had been. She woud have been so frightened and sorry. He pictured Carol with the light dying out in her eyes, with pallor eating the roses in her cheeks, with languor in her step, and dullness in her voice—the Carol she would surely have been had she known that David was walking under the shadow of death. David was very happy. He was so much better, of course he would soon be himself. Things looked very bright. Somehow tonight he did not yearn so much for work. It was Carol that counted most—Carol and the little Julia who was theirs and would some day be with them. The big thing now was getting Julia ready for the life that was to come to her.

He was richly satisfied.

"Carol, this is the most wonderful thing in the world, companionship like this, being together, thinking in harmony, hoping the same hopes, sharing the same worries, planning the same future. Companionship is life to me now. There is nothing like it in all the world."

Carol snuggled against his shoulder happily.

"Love is wonderful," he went on, "but companionship is broader, for it is love, and more beyond. It is the development of love. It is the full blossom of the seed that has been planted in the heart. Service is splendid, too. But, after all, it takes companionship to perfect service. One can not work alone. You are the completion of my desire to work, and you are the inspiration of my ability to work. Yes, companionship is life—bigger than love and bigger than service, for companionship includes them both."

(To be continued)

In cleaning up the garden, gather and burn all the old plant parts, particularly such as are troubled by diseases. This prevents the disease from being carried over to infect next year's crop. Digging or plowing under the old stalks and leaves and weeds is very effective for some diseases, but for others, such as cucumber wilt and celery blight, fire is the best cleansing agent.

The New York State College of Agriculture, at Ithaca, has a new edition of "How to Select Laying Hens." If you want a copy, ask for E. 21. A postal card is as good as a letter.

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Keeping Pastures Up to Keep Costs Down

By JOHN DAY

IT is imperative that live stock farmers realize the maximum benefits from their meadows and grass lands during the current year, due to the high price of feedstuffs and concentrates. Particularly in the case of dairy farms is it necessary for the owner to utilize as much as possible of roughage and grazing as the basis for maximum milk flow and to reduce to a minimum the purchase of grains and concentrates. Conditions have become such that in some sections milk farmers are dispersing their herds.

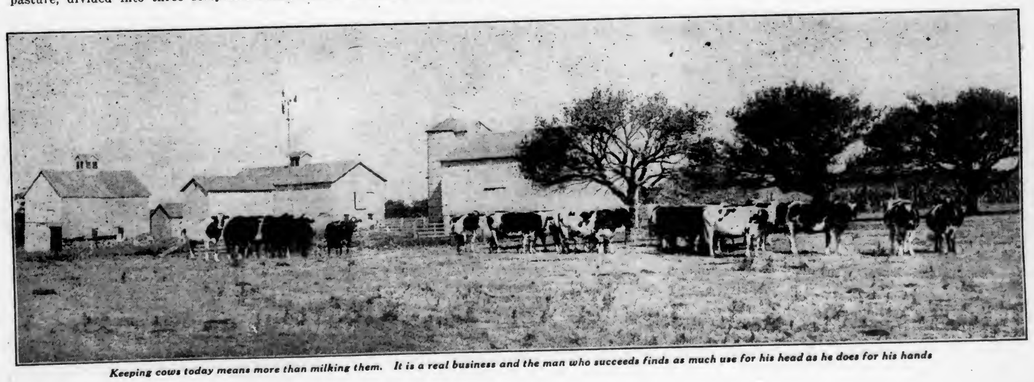
It is of fundamental importance that meadows intended for pasturage should be favored during the fore part of the grass season so that they will get a good start. Furthermore, intelligent management will never overstock or unduly tax the maintenance assets of good grass land. By this I mean that a fifty-acre pasture which is adapted to carry twenty-five mature cows through the grazing season should not be overworked by stocking it with thirty-five or forty animals. Some farmers advocate overgrazing of permanent pastures, as they maintain that in this manner they can control weeds. However, irrespective of the benefits which obtain, consequent on a decrease in the weeds, the ultimate effect of overgrazing is decidedly disastrous to the grass land. It is far better to control the weeds by mowing the pasture once each season at a propitious period before they have gone to seed.

In regions where grass is nutritious and plentiful the dairyman should practice a rotation of pastures so that each grass lot will get a rest period at regular intervals, which will favor its rapid recuperation from the strain of heavy grazing. A farmer with fifty cows and one hundred and twenty acres of pasture, divided into three forty-acre fields, would be ideally situated to practice pasture rotation. It would pay him to use the field nearest the barn as permanent night pasture, while he could alternate the cows during the daytime between the other two. For emergency or reserve purposes the night pasture or one of the day lots would always be available.

In sections where grass is not dependable, or deficient in supply and quality, it will pay the dairyman to plant soiling crops, either to be fed green or pastured. The surplus green stuff will be available to carry the cows over periods of dry weather and short grass, or they can be used as a daily constituent of the ration where plantings in alternation or succession are made so as to have a fresh supply of the green feed coming on all the time during the growing season. Sorghum, cow peas, soy beans, millet, Sudan grass and corn sown broadcast may all be used for this purpose, either alone or in combination. Even where the dairyman has plenty of ensilage for summer feeding it will pay him to raise a few acres of soiling crops to give change and variety to the ration. The soiling crops usually serve a double purpose in regions of limited grass supply, as they keep the cows at a point of profitable production while they measurably lessen the amount of supplementary grain which has to be fed to hold the cows from shrinking in their flow of milk.

The cow peas, soy beans and sorghum are ready for soiling purposes about six weeks after planting, unless seasonal conditions are unfavorable. These crops may be planted as late as the middle of July for this purpose. The best plan is to plant one or two acres every other week, or whatever acreage is necessary to carry your herd, so that as soon as one patch of the green stuff is exhausted another will be available. Green corn usually is in prime shape to feed as a soiling crop about the time pastures begin to dry up in many sections of the country, and this roughage makes a fine form of succulence to engender milk flow. A small patch of alfalfa furnished excellent green feed, although objection to soiling alfalfa comes from the fact that it is so valuable for hay and because it is difficult to harvest all of the green stuff without waste, due to its rapid growth.

It is not only essential that the dairyman handle efficiently the pastures which he now has, but it is also essential that he increase his grass acreage if possible during the current year. Where new seedings of grass are made it is important that the fields be free of persistent weeds. This should have been accomplished by carrying the field in cultivated crop for one or two years previous to the time when it was to be seeded down. For success with grass it is important to fertilize liberally and judiciously with stable manure or commercial fertilizer. Furthermore, it is essential not to graze the new seeding too closely the following spring, especially early in the season. It pays to harrow the new seeding and the old sods early in the spring in order to break up and evenly distribute the piles of droppings or the manure which has been applied as a top dressing. At this time more seed can also be sown if it is needed. To control weeds, mow once a year before they produce seed. Attention to these details will go a long ways toward making for the permanent success of the grazing areas. As a rule, western pastures are good. I have visited many fields which would carry one cow during the grass season. Pasture land at $250 per acre pays profitable dividends.



Keeping cows today means more than milking them. It is a real business and the man who succeeds finds as much use for his head as he does for his hands

German Crop Situation

R. W. BALDERSTON

THE condition of winter wheat throughout Germany has been like that in Pennsylvania two years ago. There was some extreme cold weather early in the winter that stopped late fall seeding and interfered with the germination growth of the freshly seeded grain. Many fields will have a fair stand in the spring, because since the New Year the climate has been very mild; others must be reseeded with some spring crop, such as spring wheat, oats or barley. Then, too, so much of this vast plain of northern Germany is so slightly elevated above sea level that any unusual rainfall makes vast lakes of the countryside. There have been unprecedented floods this year on all north-flowing European rivers, and the floods have been unusually disastrous to the freshly planted fields over great areas along the Rhine, the Weser and the Elbe.

Then, too, the shortage of phosphoric acid in the fertilizer since 1914 has steadily decreased the fertility of the soil of Germany, so that in 1919 the average production was far below that of the ten-year period from 1903 to 1913 and about that of a generation ago, when Germany began the campaign to increase her average acreage production of all staple crops by modern scientific methods. Of course, the cultural conditions are below normal now because of worn-out machinery, old, inferior horses and lack of drainage care for a complete rotation. All this has a distinct interest for Americans, because Germany bought, in the few years previous to the war, a great deal of cereals. The people will have much less buying power now, it is true, and the German mind can invent, and the people make use of, substitutes as no other nation ever dreamed of. At the same time, Germany is essentially a consuming nation, and America has an equal chance with the world to supply the shortage, if commercial conditions are not so that we cannot compete. Political conditions to the east and southeast will have considerable bearing on these matters, too, for Russia and the aggregation of small countries and peoples between here and Turkey have always furnished a large part of Germany's butter and eggs, meat, cereals and some vegetables. Commercial relations are not yet re-established, and petty racial jealousies are so strong that there does not look to be any complete resumption at a very early date. The wonderfully mild weather since January 1st has enabled farmers here to get much early spring work done. I saw onion beds being made yesterday near Leipsic. There is much plowing being done whenever the ground is dry enough. All this will to some extent make up for the shortages from both early freezing and later flooding, but it cannot entirely overcome those losses, I fear.

The Germans eat, normally, great quantities of potatoes, but these have been badly injured by the early frost above referred to, so that now each person is allowed but one pound a week, of a rather indifferent quality. Many are black inside and completely worthless from being chilled. There is therefore now a greater demand for bread as the most available substitute, and this week the ration was cut from 260 grams to 200. What next! There is no cornmeal used as such in this part of the world. Scarcity of fuel would interfere with much being added to the bread now. The usual black bread is largely rye with some wheat and potato flour. The light bread is still very brown and heavy, 90 per cent. of the grain being milled for it. Both are rather difficult for a stranger to enjoy, but one soon gets so accustomed to it that the appetite is satisfied, though it is served without butter and often without a substitute. Such is the wonderful power of the human body to make the best of its environment. To many of our group, accustomed to delicate food at home, the introduction to rougher fare was a jolt, but everyone eats what is placed before him, accepts the situation, and, what is more, is satisfied. I think many are surprised that their appetites are so elastic and adaptable.

I am writing this as I ride on the train from Berlin to Hamburg. It is my only chance to do such work now. I am sorry not to prepare a proper typewritten copy, but we still find it difficult to get stenographic help that is of service to us. Our ships are coming in, and we are branching out in a broad way. I am instituting free milk distribution centers in the big cities for the very little folks up to 6 years. It is fine to be able to see them drink milk, some for the first time in years, and they are, oh, so thin and wan! We are using powdered, condensed and evaporated American milk of standard makes. This is an American mission with an American message of charity for the little ones.

Germany, February 20, 1920.

Gold from the Orchard

E. L. VINCENT

ON one of my trips to town I met a farmer who lives a mile or two over the hills from our place. Somehow the talk turned to fruit growing, when he told me this little story:

"You know what an old, scraggly orchard that was on my place? I never had much good out of it. Last fall I sold my apples for $500, or just about a dollar a bushel, right near home, too. I did not have to put them in boxes or barrels. I took them in crates and sold them. That was all there was of it."

More bees mean more fruit and both honey and fruit sell high

That interested me, and I asked more about it. I learned that the farmer friend had remade his orchard by trimming the dead branches out carefully, removing the suckers, and spraying for insect pests. The very first spraying brought good results.

"You ought to have seen my fruit. It was so fine—great, big apples and free from blemishes. The people could not help buying when they looked at my apples."

It is easy enough to say that this is the story we have heard many times, and pass it along; and yet, heeding is what counts. Why do not all farmers who have old orchards follow this man's example? Is it because that would be too much work? I know that, for I have worked by the day cleaning up just such an old orchard as that. But it can be done when other work does not press; and as for the spraying, the men of the neighborhood can put their forces together and do up a big strip in a day. Five or six good-sized orchards may be sprayed in a day. We know, for we have done that in our neighborhood. Each man furnishes the spraying material for his own orchard. One provides a team or wagon for the spraying barrel. Help according to the requirements of the case may be contributed, so that really the labor and the expense are greatly reduced. It has paid us well to do this, and apples have not always sold as high as they do now. Perfect apples never lack a market.

New York.

Bees in the Spring

H. W. SANDERS

SUCCESS or failure in the keeping of bees is so closely bound up with the wintering problem that the condition of the apiary when the spring comes round again is of the most vital importance. In the northern states and Canada, where the winters are long and severe, we have the different factors that make for successful wintering more under control than is the case in milder climates. We can see to it that the hive is strong in numbers in the fall, that it has abundance of good supplies, and that it is kept in a suitable cellar where the temperature is mild and steady, the air dry and fresh, and where the bees can be largely undisturbed. If outdoor wintering has been found practicable, the hives are well protected by being packed around with sawdust, excelsior, leaves, cork or some other insulating substance, with only a very small entrance to admit ventilation and to give the bees opportunity for a flight when the weather is mild enough.

If the above matters have been carefully attended to, the beekeeper will find that his bees will be taking advantage of the first day on which the temperature goes above 60 degrees to have a "cleansing flight." Bees can only empty their intestines when in the air, and as they have been maintaining the heat of their cluster for weeks, and perhaps for months, without the opportunity of leaving the hive, they are in danger of dying of "dysentery." In the case of cellar-wintered bees they should be set out of doors when the warm days come for this reason. On a warm day after the bees have had their first flight, and when the season has advanced far enough so that the bees are busy bringing in pollen from the poplars, willows and the early anemones that spring up, the hives should be gone through. Have the smoker going nicely, and, arrayed in a good bee veil with a black piece in front to see plainly through, proceed to the rear of the first hive to be examined. Blow a whiff of smoke into the entrance to prevent the guards from piling out when the hive is jarred, and then very gently pry up the cover. Before the bees within can come running out, blow a little more smoke in. Let all movements be slow and careful, and do not use too much smoke. A little more smoke may be used whenever the bees seem to get extra roused, but generally, with Italian bees, at any rate, only a little smoke is needed. Now lift the cover gently off, lay it aside, and proceed to pry out the frames, one by one. Note carefully whether the bees have plenty of honey left to use for building up their numbers ready for the harvest that will come later. Note if there seem to be plenty of bees; if the colony is very weak, it may be wise to join to another weak one, and, above all, note very carefully if the hive has a laying queen. You do not need to see her majesty; the presence of eggs and worker brood will prove that she is there. Last spring in our apiary we had a "drone layer," that is, a queen that was worn out, whose eggs produced only drones, and, though laid in worker cells, the domed, raised coverings told their story, and the only thing to do was to hunt her out and kill her, and join the bees up to the next weakest lot. At the bottom of the hive there is often considerable rubbish and dead bees that you can clean out and save the bees a long, hard job. It is a good plan to take a clean bottom board, put it in place of the bottom board from No. 1 hive, then clean the one from No. 1 hive and use it for No. 2, and so on.

Bees consume a lot of water in their spring breeding, and if it is not provided, will make themselves a nuisance at the nearest pump or water trough. A crock or barrel, with oats to save the bees from drowning, will take care of this matter,

(Concluded on page 129)

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APRIL 1, 1920

Daylight Saving is Dying Hard

IT is amusing to read in the daily papers how various council bodies are "eating crow" in the matter of daylight saving. Recently Philadelphia council repealed their ordinance about setting the clock ahead, which they passed to show just how much farmers had to do with the time of their coming and going. Smaller cities and surrounding towns have done the same thing since it has been discovered that daylight saving ordinances were illegal, in view of a state law, passed some years ago, making eastern standard time the official time for Pennsylvania. Most bodies find it a hard dose to swallow, and there are still rumblings of discontent with such "primitive" methods, but undoubtedly everything will run smoothly during the coming months as it has done successfully for years. In New York state things are different. There the state legislature passed a daylight saving law, and a few days ago, by a vote of 7 to 64, refused to repeal it. One of the strong farm papers in that state warned the senators that they would publish the names of those who voted for and against the measure, and make it a live issue when they came up for re-election, so New York farmers have a real chance to get back at those who lose sight of their interest. What the result will be with one time in New York and another in practically every other place is hard to tell. It will be known as "summer time" in the metropolis, and practically all activities there will follow it. The railroads, however, will not change their schedules, although the commuters will have their usual train service at the rush hours. It will be nothing unusual to start from home and get to your destination, according to the clock, before you left home, or else you will find it too late to put through a deal in another city or catch a connecting train. The outcome is awaited with a great deal of interest.

Wireless Weather Reports for Farmers

SOME of the state colleges in the West are now sending out daily weather reports by wireless for the benefit of country people. The official government weather bureau report is made public at 9.30 each morning, but for the use of farmers a day is lost if mail is depended upon to bring them the information. The wireless has therefore come to the rescue, and many amateur operators "pick up" the message, which is sent about 10 o'clock, from the air and post it for the benefit of their communities. A receiving set which will do this work, it is said, may be purchased for about $35, so no doubt it will be just as common soon to have mother say, "John, tune in and get the weather," as "Mary, run out and feed the chickens." The forecast comes at a very slow rate, or, as an operator would say, on a short wave length, so even the inexperienced can readily catch it. In Wisconsin plans are about perfected to send the weather news by wireless telephone each day, as well as by wireless telegraph. In this case there will be no need to learn a code after the equipment has been bought, and many people will be benefited by one of the wonderful developments of our age. Surely the advantages of city living, especially the satisfaction of having quick communication with the outside world and things about home, are coming to the people on the farms. The rural mail carrier, with his faithful horse and daily visits, started the ball rolling, and now, with airplanes and wireless, it is hard to predict where it will stop.

Has Your Orchard a Pot of Gold?

OFTEN in our reach for the pot of gold at the end of the rainbow we overlook the kettle right on our own farm. With present fruit prices the orchard offers an opportunity to make a tidy sum of extra money. Thousands of farm orchards which have been neglected for both long and short periods are waiting today for someone to come along and reap the reward which they will surely give. In many cases even a little attention, especially some fertilizer where the trees have been starving from year to year, will pay better than anything else which could be done at this time. Spraying and pruning are essential for perfect fruit, but both operations are so well understood today that they can readily be applied when the case needs them. In many cases varieties in the home orchard have not been adaptable for market because they were the perishable kind and could not stand the long trip or rough handling necessary. With today's marketing methods, small packages and motor trucks these objections have been overcome, and many orchards formerly thought too far from the market for profitable sales are now returning an income hardly thought possible a few years ago. This bringing the market nearer to the farm has made many changes in the nature of crops produced, and those who have not taken full advantage of it might do well to consider it when making this year's plans.

City Papers Feature Milk Again

PHILADELPHIA newspapers are making much capital out of the fact that a few milk condensaries have had to shut down on account of the condition of export trade. They are telling the people one day on the front page, "Milk Markets Collapse; Break in Prices Near," and a day or two later announce, "Milk Prices Not to Drop, Say Producers." There seems always to be the inclination to place the blame for high prices on milk producers, and such little newspaper slips as multiplying the milk surplus by four—making it read gallons when the report says quarts—do not help the situation any in the minds of the consumers. The fact that Philadelphians are now paying two cents a quart less for their milk than the people in any other big city seems to make little impression. The cost of feed, labor and materials of all kinds needed to produce milk are lost sight of by those who proclaim that "grass grows just the same as it ever did." Consumers have been brought up on the principle that the price of milk drops when spring comes, and they cannot seem to understand why it is not done now. Officials of the Interstate Milk Producers' Association now wisely say that if they had only sharply advanced the price of milk in the winter when it was scarce, they could lower it now and have the people praising rather than blaming them. As the matter stands the price is to remain the same until July 1st, according to agreements made with the dealers in consideration of it, staying at a reasonable price during the winter, the idea being—and it was a sound one—that losses incurred in winter production could be recovered during the early summer months. If consumers only knew it—and more and more of them are coming to realize it—this stabilized price has meant a whole lot to them, and unless all are willing to accept it and realize that there are many factors in the cost of milk production beyond the control of farmers, it will not be long before there will be little milk for them to buy. From farmers on all sides we hear discontent regarding dairying, and it is indeed a time when the business requires close application and study. In the Philadelphia territory the outlook is bright and the demand is growing for more milk, so that producers who have good cows and good methods are losing little sleep over it.

Farm Loan Enemies Again Busy

THE enemies of the federal farm loan system have found a new interest to "sic" on the first successful long-time, easy-payment credit system they have yet enjoyed. Merely because a bill has been introduced into congress to place a tax of 10 per cent. on newspaper advertising and 15 per cent. on other forms, the Farm Mortgage Bankers' Association of America, the strongest opponent of the new loan system, is sending out a circular letter to advertising managers calling their attention to the "great source of revenue" which is lost to the government because federal farm loan bonds are tax exempt. Among other things, the letter states: "You cannot remedy the evils by kicking about the advertising tax. New forms of taxation will take its place if that is defeated. The only sure and permanent remedy is to make bonds subject to taxation. * * * Many agricultural editors have been misled by the assertion that the tax exemption of farm loan bonds causes great benefits to agriculture. A careful study of the question will prove the contrary to be the result. The advertising manager ought to be able to interest the editor." It is easy to see where the nigger in the woodpile is here. The bankers don't even want the advertising men to waste time trying to protect their own business if they will only pitch in and pull the chestnuts out of the fire for them. They overlook the figures, given in these columns a short while ago, showing the small proportion of farm loan bonds held by large investors, or mention the many tax-exempt bonds issued for the benefit of city people. No, all they want is a return of the old days, when they can practically control the farm mortgage business and charge whatever the traffic will bear, irrespective of its consequences on the prosperity of the nation. Thousands of farm owners are now slowly but surely getting out of debt for their homes who heretofore have seen nothing before them but a hopeless grind to make both ends meet. The farm loan system has made many friends and accomplished wonders in the short time it has been in operation. Plans to improve it are now in order, rather than ways to cripple it, and we have little regard and less hope for the farm mortgage bankers' attitude toward it.

The Ladies and Their Voting

WE had hopes that in this issue we could announce the triumph of women's suffrage, whereby they will vote in the next presidential election. In our issue of October 15th last, not quite six months ago, we told how they needed to convene special sessions of the legislature in fourteen states and carry five other states at their regular legislative sessions to win their long-sought goal. They have accomplished all this except in one state, the little one of Delaware, which now holds the key to the whole situation. Maybe before this issue reaches you the question will be decided, because the legislature is in session now, and both the antis and equal rights advocates are battling hard for a decision. Political pressure is being brought to bear upon the Governor of Delaware, and at times it looks as if the cause will be lost, for the time being at least.

The Garden in April

W. F. MASSEY

Spring is certainly here, and, while there is still danger of frost, the up-to-date gardener will always take some risk in order to get ahead of his neighbors. By the middle of the month risk a row of Black Valentine beans. This is an early and hardy variety, and, while not of the finest quality, it comes in nicely to begin the string bean season. By the last of the month you can put in some of the old Red Valentine beans. In my opinion, none of the newer green pod beans are any better. Burpee's Green Pod Stringless is good, and Henderson's Bountiful, also. Tait's Celestial is the best wax bean I have tried.

Sow celery seed on a well-prepared border. Sow the seed in lines on the surface, and pat them down with back of spade. Cover the bed with gunny sacks, and water on these. When germination shows, gradually raise the cover, and finally remove as the green leaves show. The plants are transplanted from this bed to a similar one, having tap roots nipped and more room given, so that there will be well-rooted plants to set out in July and August.

Pack four-inch pots, filled with rich compost, in a cold frame. Plant on each pot seed of cucumbers, melons and lima beans with eyes stuck down. Sift soil over the whole, water well, and put on the sashes, giving some air in warm days and exposing in warm, light rains. Then when the plants have filled the pots with roots, and the soil outside is finally warmed, they can be knocked out without hurting the roots, and set in the manured hills. The crop will be much earlier. Then you can use the frame and sashes still further by getting some potted plants of egg plants and setting two of them to each sash, keeping them covered at night and exposed on warm days, and finally as the weather warms in May the sashes are removed and the egg plants allowed to occupy the frame all summer. This will give you the fruit much earlier.

Set lettuce plants of the Hanson and Wonderful in heavily manured beds, ten inches each way. These varieties stand the later heat better than the Big Boston, which quickly runs into bloom in later spring.

About Philadelphia, plant the later peas the first of the month, such as the Longfellow and Champion of England. I grow these on my woven wire fence around my garden, and save room elsewhere.

Tomatoes should never be allowed to stand in the hotbed where sown to grow up thickly and slim and with poor root development. To get early tomatoes it is not sufficient to sow seed of early varieties in a hotbed. They must be transplanted to frames, where they can be protected in cold weather, and gradually hardened off by exposure to the outer air on all occasions when safe to do so. In the greater part of the territory of THE PRACTICAL FARMER tomatoes cannot be safely set in the open ground till May, and the plants should be transplanted at least a month before time to set them in the garden. Being set deeper in the soil than they stood in the hotbed, and given room 4 by 4 inches, they will develop stout stems rather than too much height. I always aim to get the plants into the cold frames when not over five or six inches high, and then keep them so hardy that they will not be more than ten inches high when set in the garden, but will have stout stems and a mass of roots that will warrant a rapid growth when set. These plants usually have bloom on top when set. If you have not sown tomato seed early in a hotbed, but have a frame at hand, you can buy the small plants ready to put into the frame. The Earliana is the earliest, but the Bonny Best is not far behind and is a far better tomato.

Cauliflower plants which have been grown in frames for heading should have the glass entirely removed from the frames the last of March in the latitude of Philadelphia. Six plants can be set to each sash in the late fall with some small headed lettuce like Tennis Ball between them, which will come out early. These plants will now be up against the sashes, and, with the sashes gradually removed, should give good heads the last of April. I once grew a thousand sashes in this way, and hardly missed a head in April and May.

Thin the early beets as soon as they have fully developed the true leaves. Some let them grow stronger and transplant them. I have never had any satisfaction from transplanted beets. Usually sow seed enough to give a supply, and you will not need to transplant.

Cucumbers and cantaloupes can be forwarded in the frames under glass by planting the seed in four-inch pots. Fill the pots with rich compost, and pack them in the frames. Then sow seed on each pot, and sift light soil over the whole, and water with sprinkling can. Put on the sashes, and let stand till germination shows, and then give air and water freely. Thin to two plants in each pot, and when the pots are well filled with roots and the weather is settled, turn them out in unbroken balls and set in well-manured hills four feet each way.

All sorts of containers are advocated for early plants—dirt bands, paper pots folded over a block and tacked, tin cans with top melted off, and all sorts of contrivances—but I have never found anything better or cheaper than the regular standard red earthen flower pots. I am still using 2½-inch pots which I bought ten years ago for about $3 per 1000 and 3 and 4-inch pots that cost less than a cent apiece, and they are still good. While the dirt bands and paper pots cost less when bought, that season is the last of them, and in the long run the red pots are far cheaper. They are also easier to handle, for the dirt bands are awkward things and take much more room than needed. For tomato plants I do not want anything but the soil of the frames. I lift these with a garden trowel, and they come up with a mass of soil and roots as big as my fist, and are set in holes filled with water, and the dry soil pulled in, and they never wilt. If you want to put plants in any sort of a container, the earthen pots bought by the hundred from the pottery will be better and cheaper than anything else.

Sow seed of tomatoes now in a warm border for the main crops to succeed the early plants and for canning. The Stone is the variety commonly used for canning, but I prefer Success, as it ripens red to the stem and has less hard core. Matchless is also good. In fact, there are numerous varieties of the main crop type. For a pink-skin tomato the Globe is probably the best. It has heavy foliage, and does not get sun-scalded like many of the red ones.

Give the early cabbages and the cauliflowers side dressings of nitrate of soda to push them along rapidly. The lettuce plants in the open ground should also have this nitrate between the rows, for all these leaf crops are better for being grown rapidly. For spring setting, use lettuce plants of the Hanson and Wonderful, as they will head after the weather gets warm much better than the Big Boston, which rapidly runs to seed in warm weather.

Plant Norfolk Market corn early in the month. This is not a sugar corn, but an early dent, and is a great improvement on the Early Adams. The early sweet corn can be planted the middle of the month. Here I have planted the Norfolk Market corn in March and had it come through all right. But the sugar corns should not be planted till middle or last of April in Philadelphia section.

I often set out a lot of tomato plants when I know that there is risk of frost, but I keep a reserve in the frames, and if the plants set out are threatened with frost, I either use the handy cardboard plant protectors or merely turn the plants over and cover with the soil till the cold passes. I once carried tomato plants through a freeze down to 21 degrees by covering with earth.

Sow seed of curled kale and mustard for greens, and Lucullus chard is the best substitute for spinach, and can now be sown. Spinach sown the first of April will give a brief harvest and soon break to seed. The southern curled mustard comes in quickly and nicely for greens, and spinach can still be sown in the latitude of Philadelphia.

Sow seed of Fottler's Brunswick and the Winningstadt cabbages for early fall use.

China asters and other annual flowers can now be sown in the cold frame for transplanting later. Seed of dahlias sown now will make blooming plants in the fall.

Canna seed from the best varieties will make fine blooming plants. The seed should be filed or held an instant to an emery grinder till the white shows through. Then soak them for two days, and sow in rows to make plants for another season's planting. Most of them will bloom, and you can select the best and let the remainder go.

If you are planting more roses, buy the two-year dormant plants, and not plants that have been forced into bloom nor the little things sent out by mail.

Set the early and the fall-bearing strawberry plants. Keep the bloom off till late in June on the everbearing sorts, and then let them bear till frost.

Don't leave the land without clover. The farm can't afford it.

Apple Standards are Coming

The establishment of standard apple grades in the state of Pennsylvania was tentatively agreed upon at a conference of state officials and officers of the Pennsylvania Horticultural Society held at the capital March 18th. The grades will not be established for the 1920 crop, but it is believed that by 1921 the rules will have been thoroughly promulgated and adopted by the fruit growers of the state. This action was the outgrowth of a resolution adopted by the Horticultural Society at its annual meeting in January. Among those who attended the conference were Secretary of Agriculture Fred Rasmussen; P. S. Fenstermacher, president of the Pennsylvania Horticultural Society; J. G. Hershey, secretary of the Horticultural Society, and H. W. Anderson and C. A. Greist, members of the executive committee; Director Guy C. Smith, of the Pennsylvania Bureau of Markets, and M. Stockton, of the United States Bureau of Standards.

The draft of the rules completed will be presented to the fruit growers, distributors and other interested parties of the state at a series of public meetings to be held in the near future, and the permanent rules will be formulated following these meetings. The adoption of the rules is not mandatory upon the fruit growers under the statutes of Pennsylvania, but the present attitude of the growers indicates a willingness to adopt the plan as being a step that is in line with the best commercial practices. The Pennsylvania Bureau of Markets plans to eventually establish an inspection service to assist in carrying out the grades.

Working for Better Blueberries

Many readers expressed interest in the effort of Miss Elizabeth C. White, New Lisbon, N. J., to locate fine blueberry or huckleberry bushes last summer, and may therefore be interested in the result of the search. After the announcement of the offer, numerous letters of inquiry were received from thirty-eight different states, also from Alaska and many Canadian provinces. Over one hundred samples of blueberries were sent, nearly all of which were smaller than those produced on plants already tried and discarded. No berries of the required size were received, but one plant was purchased for $25. This, from the province of Quebec, Canada, had berries over ⅝ inch in diameter. It was of a northern species, not likely to be of value in New Jersey, but was especially wanted for the breeding work of the United States Department of Agriculture.

The offer of $50 for a blueberry or huckleberry bush with berries as large as a cent (¾ inch across) is continued this summer. Plants with berries of this size are needed to cross with such plants already found in New Jersey. If they can be located in states north or south, they will make possible the development of fine blueberries with a greater range of adaptability to climate.

Samples of berries smaller than ⅝ inch in diameter should not be sent, as several thousand plants producing berries from ⅝ to ¾ inch in diameter have already been raised from cuttings.

Pruning Grapes and Peaches

Tom Sawyer was a good psychologist. When he had created sufficient interest, his friends were glad to whitewash his fence for him. Interest can extract the drudgery from any work, and it is because we have overlooked this fact that farming has become drudgery in so many cases. We must make our farms so attractive that our children will not want to leave the home place for the city. Nothing is of greater help in doing this than a well-planned fruit plantation for the home, and in this plantation, next in importance to the apple should stand the grape.

Grapes are the most universally liked fruit. They are easy to grow, come into bearing early, and offer a wide range of varieties. They add much to the financial value of the farm garden, because in their season little fruit of other kinds is needed, and for jellies the grape cannot be surpassed, and a shelfload of grape juice puts the cap sheaf on the season's canning.

In good soil grapes need plenty of room, and should be planted at intervals of eight feet in rows that are eight or ten feet apart. At the beginning of the second year the trellis should be put up with two wires, one hip high and the other shoulder high.

More people fail in grape growing through improper pruning than from any other cause. The easiest system to maintain is the Kniffin system, where the old trunk is run to the second wire, and one-year canes are tied right and left along each wire.

Certain fundamental principles should be remembered in grape pruning. The fruit is borne on shoots which grow that same year. Usually two, though sometimes three, clusters are produced on each healthy, well-spaced shoot. Depending on the size of the vine, from thirty to sixty clusters are all that can be produced without injury to the vine, so from fifteen to thirty bearing shoots are wanted. As each winter bud, under normal conditions, means a bearing shoot the next summer, we prune the vine each winter to from fifteen to thirty buds on one-year wood. With the Kniffin system this means four arms of from three to six buds each and a renewal spur of one or two buds where the trunk meets each wire.

The following varieties can usually be secured from any grape nursery, and should be in every garden: Early—Winchell or Diamond, Eclipse or Worden, Delaware; midseason—Niagara, Concord, Brighton, Lindley; late—Empire State, Herbert, Vergennes, Agawam or Salem, Catawba.

PEACH PRUNING

There are few farm operations more difficult to lay down a "rule of thumb" for than pruning. Each kind of fruit and each variety has a different habit of growth, and each individual tree presents its own particular problem. Yet if we understand the fundamental principles involved, pruning becomes easy. Next to the grape the peach is the easiest fruit to shape to the will of the pruner, and, like the grape, lack of success is more frequently due to neglect in pruning than to any other factor.

The peach produces its fruit on wood that is one year old. In the fall, if we examine a well-developed branch which has grown that summer, we usually find, along the lower third of the branch, single, pointed buds; along the middle third the buds are usually in sets of three, the two outer ones larger and plumper than the middle one; along the upper third the buds are again borne singly, though occasionally they are in twos and threes. The single buds of the upper and lower thirds and the small, compressed buds in the center of the groups of three are foliage buds. The plump outer buds are the fruit buds. In other words, the fruit is usually found along the middle of last year's growth. On old trees where the pruning has been neglected the annual growth is frequently very short, and we find fruit on what looks like a short spur an inch or two long. Such fruit is usually smaller than that on the more vigorous branches.

All peach pruning should be planned to produce a vigorous annual growth. This means rather heavy pruning each year after the trees come into bearing. The old method of heading back all the annual growth about one-half is being discarded in favor of a renewal system. Each main branch is encouraged to make a vigorous growth for three or four years by giving it all the light and room it can use; then the lower growth is pushed by removing the upper part of the branch. The next year more of the branch is taken out and the lower growth still further encouraged, and finally nearly the entire branch is replaced by one of these lower branches. In this way we may have a trunk fifteen or twenty years old, but a top no part of which is more than six or seven years old.—R. D. Anthony, Pennsylvania State College.

Bees in the Spring

(Concluded from page 126)

and the water should be salted. This is good for the bees, and also keeps the water from becoming stagnant.

At this time of year it is very important to stop robbing—that is, the attacking of weak hives by the stronger ones and the looting of their stores. Bees are always more or less on the lookout for a chance to do this kind of work, and once they get a taste of honey or sugar, they will hunt and hunt till they succeed in forcing their way into some weak colony, and they will not rest till they have completely cleaned it out. Its luckless inhabitants will either starve or desert their barren home and swarm off. Such a swarm is called a "hunger swarm," and should not be confused with the regular swarming of late summer. To safeguard against this the colonies should have only such entrances as they can well defend, and the weaker ones may be closed down to a space so small as to only admit a couple of bees at a time. If any colonies have died during the winter, their hives should be taken away or closed up tight so that no bee can get in. Besides this, every care should be taken that no sugar syrup, honey or other sweets are exposed where the bees can get at them. We have known of cases where a honey can, thrown onto the garbage pile without being washed, caused a bad uproar in the yard, and if the can had come from a foul-brod district it might have infected the hives with that disease.

There is only one thing to be said about spring feeding, and that is the single word: Don't! Give the bees plenty in their hives in fall—after all, they deserve it—and they will not only winter better, but they will breed up faster in spring, and the messy and dangerous (because of robbing) job of feeding need not be undertaken. However, times will come when we must feed, whether we like it or not. Some colonies use much more food in winter than others, sometimes feed has been short the fall before on account of a sugar shortage or a honey failure, or perhaps bees have been bought and found to be short of stores. Whatever the cause, it is far better to feed than to have the bees suffer any want through neglect. It is of the first importance that every hive should contain not only enough for immediate needs, but a reserve in sight for some time, for the bees' instinct makes them hoarders, and they will only undertake the heavy work of raising enough bees for harvest when they feel that they have enough and to spare.

There are many good feeders on the market, but we like as well as any a home-made one consisting of a honey can with a few nail holes punched in the lid. It is filled with syrup, and turned upside down over the bees, inside a super. For spring feeding the syrup should be made much thinner than that used for fall. About two parts of water to one of sugar is right.

Bees usually get plenty of pollen from natural sources, but if they show they are short by robbing the horses' feed box of chop, then it is well to feed them artificial substitutes. Rye flour and pea flour are the best, but any fine chop will answer, and when the bees have taken their portion, the rest can still be used for the cattle.

Attention to the bees now will bring in a rich return later when the summer flowers present their stores of nectar to our little servants' thirsty tongues.

Treating Seed Potatoes

To control common scab and rhizoctonia, two common diseases of potatoes, the Ohio Experiment Station has found that soaking seed potatoes for an hour in a solution of 4 ounces of corrosive sublimate to 30 gallons of water is effective. A new solution must be used after the third treatment.

A simpler treatment for scab alone is to soak the potatoes for an hour and a half in a solution of 1 pint of formaldehyde to 30 gallons of water. This solution may be used indefinitely.

Usually potatoes are treated just before planting time, but it is necessary to disinfect crates, bags, buckets and the planter—in fact, anything that is used in handling the seed tubers.

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The Farmer and his Workshop

R. B. RUSHING

Farmers in general have not yet fully awakened to the importance of the use of mechanical tools at home. Every farmer brings them into use more or less, but not one-half of them use the saw, plane and hammer one-tenth part of what might be made profitable. The chief hindrance to mechanical employment upon the farm I believe to be attributable to the neglect of obtaining aids, or, in other words, of procuring tools. But few farmers have even a decent saw or hammer upon their premises, and it is very seldom that we find what might be called a good set of bench tools, and in many neighborhoods it would be difficult to make up a set by bringing the entire lot together. The husbandman who depends upon borrowing is always in trouble, besides which the time spent in going for and returning tools, with the money spent in replacing damaged ones, would amount in a single season to almost enough to procure a tolerably good set.

It is just as essential that the farmer should understand the principles of mechanism as it is that he should be posted in the principles of stock raising, grain growing or any other department intimately connected with his vocation. He should know when his mowing machine, hay rake, plow or other implements are not properly adjusted, and be able to apply the remedy, and to be well enough posted to prevent being cheated when purchasing these implements. Every farmer should fit up a workshop. Build a place for the purpose, and get a kit of bench tools just as soon as the circumstances will admit of it; then a tool will be at hand when wanted, and nearly all the repairs upon farm implements and buildings may be done without going to the expense of employing a professional mechanic.

There are rakes, hay and wood racks, sleds, wagon boxes, harrows, field rollers, etc., which may be kept in good order at the home work shop, and innumerable improvements made around the farm buildings. There are grain troughs to be made, barn doors to fix up by rehanging, stanchions to build or improve, weather boarding to be put on and roofs to mend, besides scores of other little necessities in and about the place for the convenience of the women folks as well as the men. Every housewife who has a husband or a son familiar with the use of the farm tools will give her testimony in their favor.

Any man of even ordinary ability will be surprised after a little practice to find how much he is capable of doing. If he is a man in the habit of doing his work well, he will also have the satisfaction of knowing that he has saved himself a good, round bill at the village shop—one which many farmers often find it very hard to pay, on account of often being unjustly large. A man cannot be called shrewd who goes one or two miles to have a new whiffletree made when he could work it out himself in the time he was going to the shop, to say nothing of having to pay for having it done besides. There is nothing more provoking to me, when work is pressing, than to find implements out of order. A day's delay at planting time, going away for repairs, will sometimes be of greater damage to the farmer than the expense of a new plow.

I do not advocate the too common theory that if a farmer prospers he must be a drudge, and the appeal here made for the farmer to be a farmer mechanic is not for the purpose of a way to labor every hour of every week. It is rather a matter of convenience and profit to save labor and expense. However, a thorough-going man does not like to be idle, nor yet does he prefer anything that pertains to servitude. It is free, voluntary action in any pursuit that makes men contented, and industry and economy that makes them wealthy.

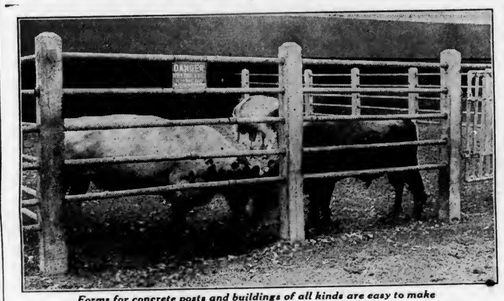
CARE OF TOOLS AND IMPLEMENTS

Do not hang the scythe up in the barn, shed, or any other place, attached to the snath, for many accidents occur every season to children or animals knocking them down. Separated, they are much easier stored and much less dangerous. Wagons, racks, forks, rakes, etc., should all be in good order before the season for their use comes.

Any delay in repairing harvesting tools may not only subject the farmer to loss of money by hindering the field hands, but by prolonging the time of garnering his crops. If any part of the wagon is weak, or any of the small tools out of order, thoroughly repair them before going to work with them.

The farmer who leaves his mower in the field, or backs it under a shed where it can be reached by driving storms, will have to buy a new one twice as often as a careful manager, thus incurring heavy expenses, when but a few hours' time at most is required to fit up and put it away in the proper manner.

A coating of three parts lard and one part resin applied to farm tools of iron and steel will effectually prevent rust. See that they are dry and wiped clean before oiling. The irons upon machinery where there has been friction are bright, and the grease upon them is soft, which can be easily removed. Wipe the journals and boxes clean with a cloth moistened with spirits of turpentine or coal oil, and then rub them over with an oiled rag. Take off the cutter bar, wipe clean and oil the sections and guards, and then put them safely away. A coat or two of painting, if not put on last fall, will now be in order before using again. If allowed to get rusty they will never work as nicely as before.



Forms for concrete posts and buildings of all kinds are easy to make if a few tools are kept ready for use

Last Year's Corn Lessons

CLIFFORD E. DAVIS

Some farmers go on from year to year, forgetting the lessons of the year before and making the same mistakes. Any man can fall into a hole once, but surely he is a fool who falls into the same hole twice. Last year corn planting was delayed on account of the late-staying cold and wet. Even when it was fit to plant, many farmers were not ready and wasted days in other pursuits. As a consequence the most of the corn did not develop well, and in my county there were whole crops of soft or shelly-grained corn, not one ear in ten barrels fit for seed, all of low vitality and little feeding value. I had to buy ten barrels from two different farmers, and, while the corn was big enough, it was very mediocre in nutritive value. Both the fields needed clean culture to produce good, sound corn, which they did not get, and both needed good seed, which it was not, being a mixture of big cob, little cob and of every style of grain known to man.

When the soil is warm enough to germinate weeds, it is best to hustle the corn in, if not too wet, and help it along all summer, pushing it to early maturity. While the big-cobbed Minnesota and western corns are good in their climate, in our locality we must choose a quicker growing, ninety-day corn that will mature before the September frosts. Our county agent had the impudence to tell me that there "ain't no such animal" as a ninety-day corn; that all corn took a hundred and ten to twenty days. I find Pride of the North, Early Leaming and certain early yellow and white cap dents are all ninety-day corns, while Sanford's White Flint, Early Longfellow Flint and Silver Triumph mature in even shorter time, the last named being the best.

All your cultivation and feeding cannot ripen a hundred-and-twenty-day corn in less time, and that extra thirty days is most liable to give you a frost-bitten, worthless crop, as I saw in so many places last fall. *Maryland.*

Look into the silo question now.

Making Posts Last Longer

Five hundred million fence posts in the United States fail by decay every year. At 10 cents each this means an annual loss of $5,000,000. These figures were brought out in a lecture, during Farmers' Week, by C. H. Guise, of the forestry department of the New York State College of Agriculture.

Most of the fence posts used are of non-durable woods, such as beech, birch, ash, maple and cottonwood, and have a natural life of but three to six years after being set in the ground. If these were impregnated with creosote they could have been made to last from fifteen to twenty-five years and even longer. The length of life depends on the kind of treatment and the amount of creosote absorbed by the post.

The lecture was followed by a demonstration in which the various methods of treating fence posts with creosote were shown. The farmers not only had an opportunity of seeing at first hand how the work should be carried out, but they also learned about the various preservatives, the kinds of wood best suited for preservative treatment and the costs of such work. Mr. Guise stated that with the use of lighter creosote oils any of the so-called non-durable woods can be made to last from three to five times their normal period when used in contact with the soil.

Soft maple, basswood and elm posts were among those treated. These posts will be set out on the college farm. Records are being kept of them in order to determine the length of life which can be expected under all conditions.

Funds for Temple of Agriculture

Seventeen states had participated in the campaign to raise funds for the Temple of Agriculture at Washington, D. C., on the completion of an audit February 18th by certified public accountants. This audit showed total receipts of $41,915.06, of which $4000 was in the form of a loan, $131.29 a credit in adjustment of taxes on the property bought at 1731 Eye street for a temporary home, and $37,783.77 in gross contributions raised through the farm organizations.

Following is a list of the contributions by states as received up to the time of the audit: Washington and northern Idaho, $20,039.16; Pennsylvania, $11,134.96; California, $1696.90; Georgia, $926; Iowa, $718.50; Virginia, $678.40; Maryland, $558; South Dakota, $557; North Dakota, $530; Kentucky, $266; Tennessee, $229; Montana, $190.85; Michigan, $100; Wisconsin, $100; Colorado, $25; Idaho, $25; Louisiana, $9; total, $37,783.77.

More than one hundred live stock farmers, county agents and delegates from live stock shipping associations representing thirty-one counties met in Columbus, Ohio, March 8th and 9th in the interests of live stock shippers of the state. As a result the Ohio Federation of Co-operative Live Stock Shipping Associations was formed, with F. E. Perry, Leipsic, Ohio, president, and T. D. Phillips, Columbus, Ohio, secretary. The Ohio organization is a part of a national shippers' organization.

Choosing the Fertilizer for Corn

TIMOTHY CLOVER

In choosing the fertilizer for corn, we ought first to consider the relation which the various fertilizer plant foods bear to corn production. With that in mind, and knowing the past history and crop-producing ability of the land on which we propose to grow the crop, it is fairly easy to make selection of the proper commercial fertilizer. The essential plant foods needed are ammonia, phosphoric acid and potash. Some fertilizers contain all three elements, some only two, and some one. The variation allows selection to meet conditions as they exist on any given farm.

When fertilizers are offered for sale the percentage of plant food contained in a hundred pounds is indicated by an analysis which is printed on the bag. This may be 2-12-2, which means that the fertilizer contains 2 per cent. of ammonia, 12 per cent. of phosphoric acid and 2 per cent. of potash.

Except where the soil is very rich in vegetable matter (organic matter, or humus), the fertilizer should contain 2 per cent. of ammonia to act as a starter. We have all seen fields where the corn started out in good shape, but the seedlings, soon after they broke through the surface, seemed to lose their ambition, turned a sickly yellow-green, and stood still, making no growth for days at a time. When the ammonia in the soil was exhausted, growth had to stop until warm weather brought about increased decay of the vegetable matter and thus released ammonia.

At the time when corn is planted the soil is cold and low in available ammonia. When the young rootlets begin to reach out for this plant food and fail to find it, growth immediately slows up. The 2 per cent. of ammonia in the fertilizer is to supply this plant food during the days when the soil itself cannot furnish it. Naturally this amount is not sufficient to supply all the corn crop needs. An 80-bushel crop of corn draws from the soil, in grain, stalks and leaves, 140 pounds of ammonia. A 400-pound application of a 2 per cent. ammonia fertilizer gives us 8 pounds. The difference must ordinarily be furnished by good farming—by growing legumes, such as clover or alfalfa, and by carefully saving and applying manure. When manure is applied in large quantities this ammonia starter is sometimes unnecessary. Under such conditions select the fertilizer from the four analyses which have no ammonia.

LARGE AMOUNTS OF PHOSPHORIC ACID NEEDED

All the fertilizers recommended for corn should be high in available phosphoric acid. The growing corn needs large amounts of this plant food. At the very beginning it favors the growth of roots and gives the plant a strong foothold. Later on it makes these roots larger, more widely distributed, and increases the number of tiny rootlets which take up plant food. The presence of available phosphoric acid in the soil often makes the difference between a good crop and a poor one.

Again, when ripening time comes, phosphoric acid plays another important part. It helps harden the kernels, and ripens the corn quickly. Perhaps you have seen a field where the crop came along well all summer and promised a good yield of hard corn, but failed to ripen up in the fall. Failure to ripen at the proper time frequently results in soft corn. Soft corn makes a nasty crop to handle, results in big loss, and in a year when it is general it is always followed by a serious shortage of seed.

Most soils are low in available phosphoric acid, as the sale of animals and crops carries away much of the original supply from the land. Farm manure cannot make up this shortage, for manure is itself low in phosphoric acid.

In potash a greater range of choice is necessary than with either ammonia or phosphoric acid. There are conditions where the soil "can do it all," and other conditions where as high as 8 per cent. of this plant food should be used.

Muck and peat soils are always low in potash. It is here that the 6 and 8 per cent. grades are needed. So extreme is the crop need for potash in these soils that on many of them corn cannot be successfully grown unless potash is applied in the fertilizer.

Sandy soils likewise are usually low in available potash. On many such soils fertilizer carrying 4 per cent. potash will be sufficient. If, however, a sandy soil is old and has been cropped many years, the use of the 6 per cent. potash grade is often better practice. On loam soils less potash is required, while on clay soils that element may sometimes be dispensed with altogether.

DIFFERENT KINDS FOR DIFFERENT CONDITIONS

Keeping in mind the relation of each plant food to the growing of corn, and knowing the treatment of the soil on a given farm as regards manure and legumes in this rotation, together with information as to the type of soil, it is fairly easy to select the proper fertilizer to use on corn. Following is the way it works out: On sandy and loam soils use 2-10-6, 2-10-4 or 2-12-2. On clay and clay loams and where there is no crop response to potash, use 2-12-0. On muck and peat soil use 0-10-8, 0-12-4 or 0-12-2. Where legumes are grown in a short rotation and where there is no response to ammonia, use 0-12-4 or 0-12-2. To reinforce manure and on the newer soils where corn makes a rapid growth right from the start at 1 where the soil has plenty of potash, use 0-16-0.

Maryland.

Pennsylvania Cattle Feeders' Meeting

The annual meeting for Pennsylvania Cattle Feeders will be held at State College, Thursday, April 8, 1920. At this time the cattle-feeding experiments for the winter will be concluded and the results of the test explained. The experiments conducted should be of interest to all cattle feeders in the state. It is hoped that a large number of feeders can attend this meeting, as some interesting results will be secured from this feeding trial. The cattle used on this experiment were purchased on the Chicago market last November. Two experiments are in progress at the present time. Five lots of twelve cattle each are on a test to determine the best ration for handy-weight cattle fed for a period of 140 days. Two lots of six cattle each are on an experiment to determine the value of molasses as a substitute for part of the corn in a fattening ration for heavy cattle fed for a period of 140 days.

Specialists regard sweet clover as quite necessary in farm rotations, because it develops a fleshy root which penetrates the subsoil to a depth of at least three feet, whereas many of the other legumes are only shallow-rooted crops.

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—land similar to that which through many years has yielded from 20 to 45 bushels of wheat to the acre. Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity, independence, good homes, and all the comforts and conveniences which make for happy living.
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WESTERN CANADA Farm Lands at Low Prices The Wheat Belt of America

Counting Chickens Before They Hatch

F. V. L. TURNER

Now begins the annual chicken making. The start actually began in the mating of birds, but the real beginning is at the moment when the downy ones are placed under the hover, and the incubator either started on its final hatch or closed for this year.

Some writer recently stated that it required five eggs to produce a pullet matured. Perhaps in many cases it does; doubtless it requires more in some cases. However, the real poultryman or woman—the one that is compelled to make a living out of hens—would go shy if such was the case. This five-egg statement was based on hatching 60 eggs out of each 100 set, counting one-half of them being pullets, and then losing a third in rearing them, thus giving 20 pullets for the 100 eggs. With selected eggs, at least a 70 per cent. hatch should follow, free from weaklings or cripples. Granted that in very early hatches there is a larger percentage of males, later hatches show a preponderance the other way; hence the rate of the season's females more nearly approaches 40 females to 30 males.

So far as mortality goes, the percentage of 33 1-3 is absurd to the average poultryman. One of New England's most widely advertised and more nationally known breeders has a record of less than 1 per cent. mortality in a hatch of 3300 chicks. Most of this mortality resulted from crows. Another case, in New Jersey, was a mortality loss of 21 chicks out of a total of 3900. In the writer's experience there has never been a case of mortality for the entire year of over 8 per cent., and this was in an epidemic of roup, brought to the premises through purchased stock secured at an auction.

It has been definitely determined that chick mortality is controllable to a positive extent through three simple factors: Freedom from draughts, sufficient warmth to prevent chilling, and clean feeds.

Clean feeds mean as much as either of the other two factors. It embraces sanitation under the hover (to prevent contagion through and by stepping in feeding vessels), in the runs and in the drinking vessels. Prepared chick foods before the babes at all times, with plenty of green food and enough grains for gizzard function, means almost constant growth and therefore a high state of health.

With a 10 per cent. mortality of all chicks able to go under the hover, four eggs would be an extremely liberal allowance with which to mature each pullet.

On the other hand, the cost in eggs per pullet is materially lowered in the return from the males produced.

Since the foregoing is intended more to show that liberal allowance must be made in calculating the eggs to be set than to describe methods for hatching, maturing or growing chicks under a low mortality loss, yet it is worth noting that low mortality is easier of accomplishment than high fertility and hatchability.

Fertility, and therefore hatchability, should be the primary consideration. Local conditions govern fertility, after condition of the breeders. Ordinarily the season's effect is felt to marked degree when spring is late. This is a result of natural conditions. A delayed spring delays functioning of the organs of reproduction. Early spring accelerates genital activity. Therefore a warm house, with a protected run, dry ground, and green feed, promote genital activity and high hatchability.

There are more failures in pullet production through low fertility and low hatchability than from any other cause except rats. Low mortality is comparatively easily attained through the governing factors given above.

WORTHWHILE SUGGESTIONS

The secret of good health in chicks is sanitation.

Quick of action, alert, and a desire to extend courtesies to the females of his flock, are the qualifications for a breeding male anatomically correct otherwise. Females of a busy disposition are the best breeders, provided they are good feeders.

Hatch as many chickens as you possibly can this year. The egg storage interests are determined to store this year at a low figure, and the present downward trend of eggs is the evidence. Hatch more chicks and sell fewer eggs to the regular collectors; your chicken meat will more than make up the difference.

Note the difference in price of chicken meat now and five years since. Does farm poultry pay? Raise more and increase your earnings.

In 1910 the average price paid the producer for his eggs was 19 cents. Few eggs went into storage last year at less than 30 cents; the average was nearer 50 cents to the producer for the year.

Few complaints are received concerning the failure of egg producers to make both ends meet; in fact, you never hear such things any more. Anyone remember when country stores paid 12 and 14 cents for eggs—in trade, too?

'Twill be a long spell before eggs and hen meat reach the levels of five years ago; let's take advantage of natural opportunities.

Good stock is more valuable than mongrel. A small investment in one good breeding pen will convince the most skeptical.

Testing Incubator Eggs

All eggs are not fertile, and not all fertile eggs produce living chicks, as many of the embryos die during incubation. If such eggs are not removed at intervals, they are apt to injure the hatch. Accordingly, the poultry department of the New Jersey Agricultural Experiment Station recommends that the eggs should be tested twice during the incubation period. On the seventh day the eggs should be candled and all infertile eggs removed. These eggs will appear absolutely clear before the candle. Any eggs at this time which show blood rings, which mean a dead embryo, also should be removed. On the fourteenth day the eggs should again be candled, and all containing dead embryos eliminated. The vigorous embryo at this time appears as a dark, opaque mass, occupying most of the interior of the egg other than the air cell. The area occupied should be clear and distinct, with a very definite line bounding it.

Removing the non-hatchable eggs allows more room for the other eggs, and makes possible doubling up and thus increasing the capacity of a number of incubators. Also, such tests indicate how the fertility is running from the various matings, and by candling, the size of the air cell can be determined. This acts as a check or measure of the amount of cooling and moisture which the machine is receiving. On the seventh day the air cell should be about one-fourth of an inch deep, on the fourteenth day about one-half to five-eighths of an inch deep, and on the nineteenth day about three-fourths of an inch deep.

Poultry News Free

The next three issues of POULTRY NEWS will be sent free and without obligation to all poultry raisers who write at once and enclose the names and addresses of 3 friends or neighbors who keep chickens. Each issue is full of valuable hints on chicken raising; how to prevent White Diarrhoea; how to save baby chicks; how to develop big fat broilers; how to start pullets laying early; how to get more eggs. Every poultry raiser who wants to make money out of his poultry should read these free issues. Just send a post card or letter today with the names of 3 or more friends or neighbors. Address Editor Poultry News, 4354 Poultry Bldg., Kansas City, Mo.

Barred Plymouth Rocks Fine healthy stock. Headed by Holterman's Aristocrats direct. New York and Chicago winners. Dark only. Good layers, have yellow skin and straight narrow bars running to the skin. The kind that bring success. Eggs, 15, $2.50; 30, $4.00; 50, $5.50; 100, $10.00, prepaid. Your money's worth guaranteed. **S. E. SPITZER, Harrisonburg, Va. R. 4.**

TURKEY EGGS From our large vigorous M. Bronze, B. Red, Narragansett, White Holland, $4.00 for 6; $7.75 for 12. B. P. Rock and S. C. R. I. Reds, $2.00 for 15; $10.00 per 100. All eggs prepaid, by mail or express. Orders given prompt attention. WALTER BROS, Powhatan Pt., O.

Hummer's Famous Baby Chicks Ready for delivery March 15th, and each week. Barred Rock, R. I. Reds, S. C. Anconas, S. C. White Leghorn and S. C. Brown. Brooding Equipment, the kind that raises all of your chicks. Circulars free. Correspondence a pleasure. E. R. HUMMER & Co., Frenchtown, N. J.

HATCHING EGGS From FREE FARM RANGE POULTRY Rocks, Reds, Wyandottes, Leghorns, Minorcas, Hamburgs, Anconas, Brahmas, Ducks, etc. Also Hares, Cavies and Holstein cattle. Catalogue free. **H. A. SOUDER, Sellersville, Pa.**

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CHICKS FROM STOCK that bring success. Best of service. S. C. W. and B. Leghorns, Barred P. Rocks and mixed chicks. Prices right. Parcel post prepaid and safe delivery guaranteed. Booklet free. **THE CYCLONE HATCHERY, Dept. 3, Hillsgrove, Pa.**

CHICKS White Leghorns..... $20—100; Barred Rocks..... 25—100; R. I. Reds..... 25—100; White Wyandottes. 30—100. **Tappan Poultry Farm, Tappan, N. Y.**

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FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Anconas, Orpingtons, Langshans, Brahmas, Leghorns, Andalusians, turkeys, ducks, geese, guineas. Prices low. **Ralph H. Raby, Loudonville, O.**

Tiffany's Superior Chicks That Live Wyandottes, Rocks, Reds, Leghorns Pekin, Rouen and Indian Runner **Ducklings** **Aldham Poultry Farm, R. 3 C, Phoenixville, Pa.**

Hatching Eggs from quality bred-to-lay, 200-egg strain, Anconas, White Wyandottes, Partridge and Bar. Rocks, Buff Orpingtons, Indian Runner ducks, Toulouse geese, Bourbon Red turkeys. Mating list. Mrs. Goetter, R. 5, Media, Pa.

200,000 CHICKS FOR 1920 Now is the time to place your order for spring chicks. Prices reasonable. Satisfaction and safe delivery guaranteed. Catalog free. **KEYSTONE HATCHERY, Richfield, Pa.**

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EGGS from thoroughbred Light Brahmas, Columbian, Wyandottes, Silver Campines, Rocks, Reds; $1 per 15; $2 per 30. Leghorn, $1 per 15. No postage paid. S. G. BEALER, Coopersburg, Pa.

Giant Bronze Turkey Eggs from 32 pound, six month cockerel, sire 1st Chicago. Buff Rock eggs, Hogan tested layers. **J. C. Clipp, Box 50, Salitillo, Ind.**

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Eggs for Hatching Heavy laying, Barred Rocks, both matings. Contest winners. Lt. Brahmas. Cir. Lackawanna Poultry Farm, North Water Gap, Pa.

Eggs for Hatching. S. C. Black Minorcas, W. C. Black Polish, White Japner Silkies per setting, $3; two settings, $5.00. Few B. Minorcas and B. Polish cklts., $5 each. McCommer & Myers, Gettysburg, Pa.

R. C. Br. LEGHORN EGGS $1.50 for 15. White Chinese Goose eggs 40 cts. each. MRS. CLAUDIA BETTS, Hillsdale, Mich.

CHICKS, eggs, ducks, turkeys, geese, hares and stock. Incubators, brooders, supplies at low prices. Free list. J. W. Hoover & Co., Box 172, Tiffin, O.

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White Leghorns	$20.00	$10.00	$6.00
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Barred Rocks	28.00	14.00	7.50
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White Rocks	35.00	18.00	9.50
White Wyandottes	35.00	18.00	9.50

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W. F. HILLPOT, Box 4, FRENCHTOWN, N. J.

A Strawberry Bed for Every Farm

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1290, MAY 1.—What is the farm labor situation in your locality this spring? What wages are being paid for married and single men, and what privileges are supplied? Has the help problem affected your usual methods of farming in any way? Have you had success with girls or women hired for outside work?

TOPIC No. 1291, MAY 15.—What are some of the money-saving things you have learned about the upkeep of your automobile? Maybe you get a little extra mileage from your tires, oil or gasoline, or make repairs and adjustments which your neighbor has to have done by garage mechanics. It will cost money to keep a car in commission this year, with everything high, so tell us in 300 words how we can save something.

F. C. M., Fairview, Pa.—We have grown strawberries for market for thirty years, and as we are near a good market (Erie, Pa.), consider them a profitable crop.

The plants should be dug from a bed which was planted the previous year. Ground which is not as fertile and mellow as necessary is given a coat of manure, plowed and fitted as for any other garden crop. In 1919 we also applied 500 pounds of fertilizer per acre after the ground was plowed. One of the last operations in fitting the ground before marking is to use a float or planker. This smooths out and covers up all tracks left by the horses. We mark the rows 3½ feet apart, and plant about 18 inches in the row. As a short cut in marking I use a Gordon seed drill, setting the markers at 21 inches, and by taking every other mark it gives us the desired width. This is much quicker than marking by hand, and it also leaves the ground level, making planting much easier.

Previous to planting, the plants are trimmed. We remove all but one or two of the newest leaves, and cut off about one-third of the roots. Some people use a spade to make the opening. A boy places the plant in the opening, removes the spade, and presses the dirt against the plant with the foot. We sometimes plant this way, but generally use a dibble.

We are growing the Jessie, Sample and Gibson at present. The Jessie is not quite as tart as the others, and is much nicer to eat out of hand or for dessert, but the Sample and Gibson are much better for canning and as commercial berries.

After they are planted they are given weekly cultivations and necessary hoeings until late autumn. After the ground freezes and there is much danger of heaving, we cover the vines with straw or strawy manure for winter protection. In the spring this is removed from the center of the row and raked into the path between the rows. This gives the berries a clean place to ripen, and also conserves the moisture.

M. G. F., Dryden, N. Y.—We value our strawberries very highly. During illness and because of lack of help, with the extra duties of the past two or three years we have had to put as little work as possible on them. But, even so, the bed is so big and we manure it so heavily that we still get all the berries we can use. I prefer to use about three varieties, an extra early, a medium and an extra late. In that way we have them for weeks, or until the raspberries are ready for picking. I have tried everbearers, and conclude that they require too much care for a busy farmer's wife.

The Senator Dunlap is a good early variety, but the biggest and earliest variety I ever tried was a patch of Kellogg's Premier, set out two years ago. For a main crop William Belt is splendid. A heavy mulch of straw between the rows saves much labor of hoeing and conserves the moisture so the berries make steady, rapid growth. In the fall the straw should be thrown on the plants, and a new supply added in the paths in the spring. I set the plants 14 inches apart in the rows, and have the rows about 27 to 30 inches apart. A bed run this way will last quite a number of years without resetting and with very little attention except cutting off runners when they get too rampant. We had one bed that was nine years old, and we hated to plow it up two years ago, as it still bore many berries.

We do not use manure that has weed seeds in it, but prefer acid phosphate or a very little nitrate of soda. Hen manure, free from seeds, is very good to apply in late fall.

Mrs. E. M. A., Ashville, N. Y.—I don't believe I should ever bother much with anything but everbearing strawberries, and of these the Progressive is by far the most satisfactory variety I have seen. Possibly there may be varieties of the June-bearing type that are more profitable commercially, but I don't know them.

It is always preferable to put strawberries on fall-plowed land, but it isn't absolutely essential, providing that it has previously been occupied by a cultivated crop which has received clean cultivation; otherwise, white grubs are very likely to eat up the strawberry plants, as they did mine once. Before setting the plants the soil should be thoroughly pulverized and, of course, fairly dry; young plants don't stand "mudding in" very well. I have had excellent results from fertilizing exclusively with hen manure, but I used this because I had it and didn't have anything else.

I set the plants about a foot apart in the row, in rows three feet apart. This allows lots of room for a nice, wide matted row, but the Progressives would soon fill it all up if they were allowed to do so. I like to transplant about the last of April here in western New York, if possible, but the first week in May does very nicely. Plants set early in May will ripen fruit the last of May or first of June. We always have enough for shortcakes June 1st, and an abundance of berries thereafter.

The only care I give them, either the first year or at any other time, is as good weeding as I can get time for. They should be kept clean, but I have so much housework to do that I can only steal a few minutes once in a while to work in the garden, and I consider myself lucky if I keep the weeds from choking out the berry plants. That Progressives are nearly as tenacious as the weeds and not easily choked.

They bear so abundantly and for so long that it seems foolish to fuss a year in advance with plants that bear but one crop in June. Mine are supposed to be reset every year, and I have no doubt that it pays to do so, but they didn't get it last year, and I had fruit most of the time from June 1st till December. Probably if they had been reset and refertilized the fruit would have been larger and consequently would have made more quarts, but we ate all the fresh fruit we could for nearly six months, I canned over thirty quarts, gave some to my neighbors, and quite a lot spoiled because I couldn't possibly pick them.

N. B., Conneautville, Pa.—The strawberry bed should not be too far from the house, although far enough that the chickens will not get the first picking. It should be on good, rich soil, of warm location. Rolling ground to the south or east is best. The soil should be loose, sandy or gravelly.

I find it better to take a piece of ground that has been under cultivation for one or two years, so that the weeds will to a certain extent be gotten rid of. This ground should be plowed early in March or April, and then harrowed often, making a very mellow surface, which will kill many of the weeds before your setting. This ground should be well packed in fitting so as to hold sufficient moisture. We make our rows from 4 feet to 4½ feet apart. The rows are now spaced so that the plants will be from 18 inches to 24 inches apart.

Our plants are all trimmed, not leaving any berries or stems and not over two or three leaf stems. The roots are dampened and dropped as set. We use the mound setting. Take some mellow dirt and make a mound in the row. Divide roots, and set center of root stem over mound. Pull in mellow earth to cover well the roots up to the height of the crown. Be sure and press ground very firm. A good way to see if a plant is well set is to take hold of top and pull gradually. If plant is firm, you are sure of its growth.

We generally plant about 400 sets of four different kinds, early, medium and late, thus making their bearing season as long as possible. Our earliest are Mitchell's Early; Corsican for medium, and Stevens' Late Champion for the late variety. This makes a very long bearing season.

We do not fertilize at setting. We allow the plants to start well, and then, when hoeing, apply a small handful of a good fertilizer around each plant. Strawberries should be hoed and cultivated often, keeping all weeds out. The runners should be placed in the row or aside of the row to allow an open space between the rows for convenience in picking. Also, we can after the first picking cultivate them and make the patch nearly as good a bearer the second season.

M. A. C., Newtown Square, Pa.—We are never without a patch of strawberries, and by setting 500 plants in our garden it affords ample for our own family and many to sell. We get the best plants obtainable and from reliable parties, planting as early as possible in the spring so they will have a long growing season and be well started before the hot, dry weather comes on. They do well on ground that has previously been growing vegetables such as potatoes, as it is mostly in excellent condition, being well fertilized. Or they can be set after plowing under a green cover crop such as rye, after applying a coat of manure, but never on sod land, on account of the grub that will cut the plants. Strawberries will do well in almost any soil if not too wet.

There are perfect blossoming and imperfect blossoming plants. The imperfect will not bear a full, perfect crop of berries without the perfect being planted among them. One row of perfect to every five rows of imperfect is about right.

As for the best varieties, we have, at the present time, selected the following: Big Joe (perfect), Paul Jones (imperfect) and Mary (imperfect), planting them 2 feet apart in the row, with rows 3½ feet apart, using the matted row system.

Keeping them free of weeds and well cultivated and blossoms plucked off is about all they need the first year, except covering with straw when the ground is frozen.

Mrs. W. H. H., Needmore, Pa.—Any good soil will produce strawberries in abundance if given the proper care, and a large bed is not necessary to have plenty for home use and some to sell. Prepare the soil thoroughly to a good depth, fertilize it, and have the bed well drained. For hand culture, set plants 15 inches apart in row, and have rows 2 to 2½ feet apart. To produce largest and best fruit, pinch runners off as soon as they appear, but if new sets are wanted, at least some of them should be left on. The best time to start the plants is in August. Planted at this time, they will bear a good crop the following spring. They may be set out as early in the spring as the ground can be worked, but planted at this time the blossoms that appear that season should be pinched off to make stronger plants and a better crop the following spring.

Always keep the ground clean and well cultivated. As soon as the ground freezes in the fall, cover entire bed with straw, leaves or any kind of good litter to protect it during the winter. Do not cover the bed so deep as to smother the plants or leave it on long enough in the spring to hinder their growth. Watch for indication of growth; as soon as it can be seen, push the covering away from the plants, allowing them to come up. This usually is in April. Do not remove the covering from the bed except at each plant, as this enriches the ground, keeps it moist and keeps down weeds, also keeps the fruit clean. Good spring varieties are Monroe, Sample and William Belt.

A team of horses, the pride of the transportation department of the American Red Cross, after five years of service in the war, in five armies, has recently been demobilized in Grodno, Poland. With their owner, Timosh Niewicz, they have returned to the peaceful pursuit of farming. During the war they served with the Russian, Austrian, German, French and American forces.

Strawberries

June to October

THE Strawberry Season no longer ends with the Fourth of July, at least, not for those who grow Harrisons' Everbearing Strawberries. These delicious berries are successfully grown for market as well as for the home table. The supply of ripe berries lasts until severe frosts come.

Harrisons' Strawberry Plants are grown in the heart of the world's greatest commercial strawberry section. You may choose among over 30 varieties, Progressive Everbearing, early, medium and late.

Harrisons' Strawberries, dewberries, blackberries and raspberries keep the money coming in a steady stream. Plant small fruits between the young trees and make your orchard pay a profit from the start.

Harrison's Fruit Trees are budded from our own *fruiting* orchards.

Harrisons' Evergreens, Shade Trees, Hedge Plants and Flowering Shrubs make the bleakest home attractive.

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STRAWBERRY PLANTS All leading varieties, including the best EVERBEARING KINDS. Asparagus Roots, Tomato Seeds. Quality best. Prices reasonable. *Catalogue free.* V. R. ALLEN, Seaford, Del. R.B. 59.

STRAWBERRY PLANTS A selected list, including Everbearers. We have a fine lot to offer at wholesale price.

VEGETABLE PLANTS All kinds grown from selected seed. Get our price on plants sent by Parcel Post, prepaid. Catalog free. C. E. FIELD, Sewell, N. J.

The Women's Exchange

This is the farm women's *own* department—for them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

MAY 1.—"Beds and Bedding" has been suggested by one of our contributors as a suitable topic for discussion. Considering that even the healthiest of us spend about one-third of our life in bed, there ought to be something to say on this subject. Whatever your opinion is, please don't express it in more than 300 words.

MAY 15.—Memorial Day and its observance. Too often we see neglected cemeteries and lack of appreciation of this one day set aside for our departed. What about your local burying ground and community spirit of reverence? What are some good plants or vines to decorate the individual grave, and how do you favor treating it? Tell us your ideas on anything about the subject, but do not use more than 300 words in expressing them.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Practical Plans for Interior Decorations

Mrs. C. D., Freedom, Pa.—I like to commence our spring housecleaning about the first of March by thinking, and planning, and looking at catalogs, and ordering a little paint, varnish, wall paper or anything that seems necessary to make our rooms pretty. Have found through experience that we do not need to have expensive furniture to make our rooms attractive, as paint and wall paper, plain but substantial furniture and window curtains, all harmonizing as to color, are what we want. Have also found in selecting wall paper that the plain or small figured or striped kinds give more pleasing results than the more expensive, glaring colors with large figures or stripes. If your ceilings are high, use plain or figured wall paper, and if low, used striped, with a narrow border.

After we have ordered what we need, we then, on the first warm, bright days, clean the cupboards, pantry and bureau drawers. Then as soon as the ground is dry, and a day we can have the windows and doors opened, we take out our rugs and bedding and clean them.

We have linoleum on our kitchen floor, and a Congoleum rug on our dining-room floor. We like it very much, as it does not need to be lifted, and also lays smooth on the floor. Have any of THE PRACTICAL FARMER readers had any experience with a Congoleum rug on a bedroom floor?

We have never used a vacuum cleaner. As soon as we have the dust all out of the rooms and put them in order again (which sometimes takes a week or more, depending on how much papering or painting we have to do, for I can not work steadily at it, as I have to stop to help get meals for our family of five, also look after other necessary things), I rest a few days, and then commence the cellar. We never, at any time during the winter, allow decayed fruit or vegetables to remain in the cellar. We whitewash our cellar occasionally, but have found that if a box or crock of lime is kept in the cellar it will help to keep it sweet and dry.

Most of us know how necessary it is to clean our homes occasionally of trash and dust, yet we sometimes forget that our minds get filled with trash and rust. Only while we keep our minds devoted to God are we traveling on a safe road.

Mrs. C. H., Howard, N. Y.—My rooms downstairs have all got varnished woodwork. Those upstairs are done in whites. The paper is all a "dead" tone. I do not like large figures in my wall paper. They simply furnish a room. I paper and "go over" the woodwork of at least one room each housecleaning time. I never leave any useless furniture or bric-a-brac in a room. I like a few good pictures, but not more than four. Some are just the cover of a magazine that has reproduced a good painting. These I mount by taking a clear piece of glass the size of the picture, a piece of gray tape, some gray paper with a gummed back, which can be bought at a book store, and a little care will make a very good-looking picture if the real thing can not be bought. I do not like to see a room with cheap calendars and unframed pictures all over the walls. My pictures are all hung flat to the walls.

My floors have rugs on them. The sitting-room has a large rug, and all the rest of the floors are stained and varnished, with small rugs on the places where the most wear comes. These rugs are all in two colors. Some are two shades of tan, and those in the bedrooms are blue and white. The shades at the windows are all a dark green, and my curtains are all a white scrim.

My home is a comfort to me, and is very simple. I wash the curtains from one room every week. In this way they are always "fresh," and housecleaning has lost nearly all of the old, horrid topsy-turvy look of years gone by. I never take up one room until all the rest are settled back if I can help it.

Mrs. G. M., Dryden, N. Y.—I have learned that varnished wood is not good for finishing low rooms. Our house is old fashioned and the rooms low. The woodwork is in very good condition, but its varnished surface will be removed this spring and replaced with white with an ivory tint, or a pure white. I have experimented with a few of the rooms, and the white paint is so much more cheerful and makes the rooms seem larger and higher.

I shall use grays or neutral colors in papers, with a tinge of rose in the living-room, as the light in that room is all on one side, to the east. Here we expect to put in a bay window with a low, built-in window seat. I would love to fill the window with plants, but shall not, as the light is all needed for the room. I shall have cushions made for the window seat, with gray and rose predominating.

Our big kitchen has been used also as dining-room for the past two years. This spring we shall divide it in two, using about two-thirds of the space for kitchen, and the rest, with what is now a built-in porch, for a new dining-room. The wall that is now next to the porch will be set out flush with the side of the house, and the cellar is already under the porch floor, so the new space will be warm, and the cellar warmer than when only the porch floor covered that part. A big piece of plate glass has already been placed in the door for extra light, and there will be one large window, divided in two sashes so it can be opened in hot weather. This window will be used for a few flowers, and a bird feeding shelf will be built at the sill outside which can hold a plant box in summer.

The idea of the new dining-room was my husband's. After he had been left alone to do the housework for a few weeks during my illness, he decided that that arrangement would do more towards solving the problem of a neat, attractive house than any other of similar expense. It is most difficult to present a tidy appearance at all times when the main entrance is at the dining-room door—if that dining-room is also kitchen and laundry. Too many housekeepers have to work with this handicap.

Mrs. W. H. H., Needmore, Pa.—As there will, no doubt, be more suggestions for the living-rooms, bedrooms, etc., than the kitchen, I will say a word in behalf of its decorations. At the spring cleaning I really give my kitchen more consideration than any other part of the house, for most of my indoor hours are spent in it during the summer, and I think when one has cheerful surroundings it really makes work a pleasure. There is plenty of work for a farmer's wife, canning, preserving, jelly making, preparing vegetables for the meals, etc., which must usually be done in the kitchen. If a neighbor calls, or someone on business stops in a few moments, they usually go no farther than the kitchen. Then why not have it comfortable and cheerful, especially so when it is extremely large and serves as both kitchen and dining-room, as is the case with us?

If the linoleum is to be replaced with new, I try to get something entirely different from that which was used before and of a bright and pleasing design. Then comes the wall paper. As I like something cheerful and which is in harmony with the floor covering, I rather like a medium dark paper, but not so dark as to be dismal. I use scrim for glass door curtains, window curtains, mantle drape and rocker cushions, all of the same material, and also harmonize with the wall paper as much as possible. For instance, if the wall paper is lavender, I like a lavender border in my scrim and as much the same design as the paper as possible.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9603.—Ladies' waist. Cut in sizes 36 to 44 inches bust measure. A frilly edge to the roll collar lends a dainty touch.

9600.—Ladies' Apron. Cut in sizes 36, 40 and 44 inches bust measure. The back section, extending to the waist, is cut in on with the front.

9596.—Ladies' and misses' blouse. Cut in sizes 34, 36, 38, 40 and 42 inches bust measure. This simple slip-over blouse is attractively trimmed with wool embroidery.

9593.—Child's rompers. Cut in sizes 1, 2, 4 and 6 years. Pockets of chambray are applied to stand at each side in a perky fashion.

9595.—Girls' and child's nightgown. Cut in sizes 1, 2 to 14 years. The nightgown can be made with either a high or low neckline.

9576.—Ladies' and misses' dress. Cut in sizes 16 years, and 36 to 42 inches bust measure. Contrasting material joins the lower section of the skirt to the waist.

8952.—Ladies' skirt. Cut in sizes 24 to 32 inches waist measure. The uneven tunic is fitted at the top, and drops in a long point at the front and back.

9597.—Ladies' two-piece skirt. Cut in sizes 26 to 32 inches bust measure. A line of buttons emphasizes the seam at the right side.

9601.—Ladies' house dress. Cut in sizes 36 to 44 inches bust measure. The novel waist closing adds a decorative touch.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

I usually make my curtains in the colonial style, as they are more convenient than any other I have used, especially during the summer, when windows have to be washed often. I use brass extension curtain rods for both doors and windows. These are easily kept clean, and curtains can be taken down and replaced in a few moments. If the woodwork is repainted, it is also in keeping with the other decorations.

I like my kitchen, and find it just as cheerful as any other part of the house, and I really think my neighbors do, too.

M. A. C., Newtown Square, Pa.—A housekeeper thinks not only of housecleaning, but of the improvements she may make while doing it. If carpet is beginning to show wear, it can be taken up, the worn parts cut out, and the remainder made into a rug or rugs, then oiling or shellacking the floor around them.

One of the decorations or, rather, improvements in the home that I think will be met with much appreciation by all is having the kitchen treated to a new wall covering, as there is where it should be the brightest, where it is often the gloomiest, rendered so by the color of the walls. I have one in mind that was painted a dark brown. I suppose the idea was to hide the dirt, but it showed soils and scars more than light colors would have done. Recently, instead of giving the wall its regular spring washing, they had the painter to paint it according to his own judgment, which was a beautiful cream or buff on the side walls and a robin's-egg blue on the ceiling. The change of color transformed that kitchen from a gloomy, dark place to a cheerful, bright one. One could hardly realize it was the same place, as it now was a thing of beauty and a joy, especially to the ones that spent a great portion of their time in it.

Food for Window Plants

Every window gardener wants a cheap fertilizer for plants that is not objectionable to handle. The bureau of plant industry, Pennsylvania Department of Agriculture, suggests the following mixture, known as Wagner's solution, the ingredients for which are easily obtainable at any drug store: Ammonium phosphate, 2 ounces; sodium nitrate, 1¾ ounces; potassium nitrate, 1¾ ounces; ammonium sulphate, 1½ ounces. Dissolve these salts in five pints of water, and keep this as a stock solution. For use on the soil in which the plants are growing, dilute four ounces of this solution in three gallons of water, or if only a small amount is to be used, dilute at the rate of one ounce to a gallon of water. Apply to the soil frequently.

What Our Farm Women Ask and Answer

"Have any PRACTICAL FARMER readers had experience with a Congoleum rug on a bedroom floor?" asks Mrs. C. D., of Pennsylvania.

To dispose of surplus kittens, procure a box with a tight-fitting lid, make a soft bed inside, place the kitties in, and when they are asleep, drop in a piece of cotton with a teaspoonful of chloroform on it, and shut the lid well. In an hour the contents will be ready for burial; the little creatures will have passed to the "happy hunting ground" in their sleep. This is more humane than dropping them by the road or giving them to persons who starve or mistreat their pets. Deformed chickens or badly wounded animals may be killed in the same manner. O. J.

An experienced housekeeper's rule: Loaves of bread are ready for baking when they have doubled their original size.

Home-made Fireless Cooker

The fireless cooker boom is on among the thrifty housewives in the state of New Jersey. A wooden butter tub, painted to match the kitchen furnishings, with handles and casters fastened on, packed with crumpled newspapers and lined with asbestos—this is the home-made fireless cooker. Aluminum utensils are used in it, and if the owner wants to do baking or roasting, soapstones make effective radiators.

Fireless cooker bees arranged by the home demonstration agents of various counties have been very popular among the women who have an eye to economy. Each guest arrives with a butter tub under her arm, and departs with a completed fireless cooker. Considerable is saved by co-operative buying of asbestos, aluminum utensils and soapstones.

Two hundred and fifty or more cookers have been evolved in three counties alone through these bees. Mrs. Frank App, state leader of home demonstration, has prepared a set of directions for making the cooker, which anyone may have by sending a request to the state agricultural college at New Brunswick for Extension Circular 4, "Use a Home-Made Fireless Cooker."

Control of Clothes Moths

Packing woolen goods, furs and rugs in tightly sealed pasteboard boxes or wrapping them in paper will prevent clothes moths and carpet beetles from destroying them, according to entomologists of the Ohio Experiment Station. Frequent brushing and airing prevents the insects from getting a foothold. Steam cleaning and the use of gasoline in cracks in floors or in storage boxes are also recommended to control these pests. Napthalene tends to repel moths.

Homespun Yarn from Ithaca

Clean hands and clean teeth are conducive to a happy stomach.

If the bones of lamb you see at the butcher's are white, it is a good indication that the lamb is mutton. Bones in lamb are reddish.

"Self-Study Outlines for Promoting Thrift" is the title of a bulletin the state college at Ithaca, N. Y., will send you for the asking. Ask for H. 125.

A strip of glazed paper pinned tightly around the circumference of a cake before it is frosted keeps the frosting where it belongs. When the frosting has set, the paper can be easily removed by means of a knife blade wet in hot water.

An iron-poor diet means a poor quality of blood, weakened tissues and a run-down body. Green vegetables, fruits and vegetables in general, breakfast cereals, breads made from whole grain products, and eggs, are rich sources of iron.

The old-time wooden spoons still have their advantages. They are lighter than metal, make less noise, do not scratch metal surfaces, and do not discolor the hand.

Most women like a corner of the garden all their own. You may want, then, a copy of the new garden bulletin which the state college of agriculture at Ithaca, N. Y., has just published. It is F. 145.

When cake batter is put into the pan, if the batter is brought up against the sides of the pan so that the center of the cake is lower than the sides, the cake will not be likely to rise so high in the center that it cracks open.

"Saving Strength." Every woman is interested. Ask for bulletin H. 25 of the state college of agriculture at Ithaca, N. Y.

How many cups hang over the kitchen faucet? There ought to be one for each member of the family. It will help greatly to prevent the spread of disease.

It is estimated that 90 per cent. of heat supplied for baking in gas and oil stove ovens is lost through the sides of the oven. Most ovens of this type may be insulated acceptably by means of sheet asbestos cut to fit all sides of the oven. The door will probably have to go without insulation.

A new wrinkle in cake making: Spread the filling on the bottom of the layers; the bottom is more porous than the top, and receives the filling better.

One woman has abandoned the toothpick test to determine when a cake is done. She touches the cake gently on top; if the cake springs back quickly, she knows it is done.

Persons who have suffered from insomnia have benefited by a glass of buttermilk at night. It is said to induce sleep.

Pans in which food has been burned may be cleaned readily after they have been sprinkled with dry baking powder and allowed to stand for a while.

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CHAPTER XVI

DEPARTED SPIRITS

As the evenings grew colder the camp chairs on the mesa were deserted, and the chattering "chasers" gathered indoors, sometimes in one or another of the airy tent cottages, sometimes before the cheerful blaze of the logs in the fireplace of the parlors, but oftenest of all they flocked into No. 6 of McCormick Building, where David was confined to his cot. Always there was laughter in No. 6, merry jesting, ready repartee. So it became the mecca of those who, even more assiduously than they chased the cure, sought after laughter and joy. In the parlors the guests played cards, but in No. 6, deferring silently to David's calling, they pulled out checkers and parchessi, and fought desperate battles over the boards. But sometimes they fingered the dice and the checkers idly, leaning back in their chairs, and talked of temperatures, and hypodermics, and doctors, and war, and ghosts.

"I know this happened," said the big Canadian one night. "It was in my own home, and I was there, so I can swear to every word of it. We came out from Scotland, and took up a big homestead in Saskatchewan. We threw up a log house, and began living in it before it was half done. Evenings the men came in from the ranches around, and we sat by the fire in the kitchen and smoked and told stories. Joined onto the kitchen there was a shed, which was intended for a summer kitchen. But just then we had half a dozen cots in it, and the hands slept there. One night one of the boys said he had a headache, and to escape the smoke in the kitchen, which was too thick to breathe, he went into the shed and lay down on a cot. It was still unfinished, the shed was, and there were three or four wide boards laid across the rafters at the top to keep them from warping in the damp. Baldy lay on his back and stared up at the roof. Suddenly he leaped off the bed. We all saw him; there was no door between the rooms. He leaped off, and dashed through the kitchen.

"'What's the matter?' we asked him.

"'Let me alone; I want to get out of here,' he said, and shot through the door.

"We caught just one glimpse of his face. It was ashen. We went on smoking. 'He's a crazy Frenchman,' we said, and let it go. But my brother was out in the barn, and he corralled him going by.

"'I am going to die, Don,' he said. 'I was lying on the bed, looking up at the rafters, and I saw the men come in and take the big white board and make it into a coffin for me. I am going home; I want to be with my folks.'

"Don came in soared stiff, and told us, and we said, 'Pooh, pooh,' and went on smoking. But about eleven o'clock a couple of fellows from another ranch came over and said their boss had died that afternoon and they could not find the right sized boards for the coffin. They wanted a good straight one about six feet six by fourteen inches. We looked in the barns and the sheds, and could not find what they wanted. Then we went into the lean-to, where there were some loose boards in the corner, but they wouldn't do.

"'Say,' said one of them, 'how about that white board up there in the rafters? About right, huh?'

"We pulled it down, and it was just the size. They were tickled to get it, for they hated to drive twelve miles to town through snowdrifts over their heads.

"'That's the big white board that Baldy saw,' said Don suddenly. Yes, by George! We sent for Baldy that night to make sure, and it was just what he had seen, and the very men that came for the board. Baldy was mighty glad he wasn't the corpse."

"Mercy," said Carol, twitching her shoulders. "Are you sure it is true?"

"Gospel truth. I was right there. I took down the board."

"I know one that beats that," said the Scotchman promptly. "They have a sayin' over in my country that if you have a dream or a vision of men comin' toward you carryin' a coffin, you will be in a coffin inside of three days. One night a neighbor of mine, next farm, was comin' home late, piped as usual, and as he came zigzaggin' down a dark lane, he looked up suddenly and saw four men marchin' solemnly toward him, carryin' a coffin. McDougall clutched his head. 'God help me,' he cried. 'It is the vision.' Then he turned in his tracks and shot over a hedge and up the bank, screamin' like mad. The spirits carryin' the coffin yelled at him, and, droppin' the coffin, started up the hill after him. But McDougall only yelled louder and ran faster, and finally they lost him in the hills. So they went back. They were not spirits at all, and it was a real coffin. A woman had died, and they were takin' her in to town, ready for the funeral next day. But the next day we found McDougall lyin' face down on the grass ten miles away, stone dead."

The girls shivered, and Carol shuffled her chair closer to David's bed.

"Ran himself to death?" suggested David.

"Well, he died," said the Scotchman.

"Is it true," asked Carol, glancing fearfully through the screen of the porch into the black shadows on the mesa.

"Absolutely true," declared the Scotchman. "I was in the searchin' party that found him."

"I—I don't believe in spirits—I mean haunting spirits," said Carol, stiffening her courage and her backbone by a strong effort.

"How about the ghosts that drove the men out into the graveyards in the Bible and made them cut up all kinds of funny capers, and finally haunted the pigs and drove 'em into the lake?" said Barrows slyly.

"They were not ghosts," protested Carol quickly. "Just evil spirits. They got drowned, you know—ghosts don't drown."

"It does not say they got drowned," contradicted Barrows. "My Bible does not say it. The pigs got drowned. And that is what ghosts are—evil spirits, very evil. They were too slick to get drowned themselves; they just chased the pigs in, and then went off haunting somebody else."

Carol turned to David for proof, and David smiled a little.

"Well," he said thoughtfully, "perhaps it does not particularly say the ghosts were drowned. It says they went into the pigs, and the pigs were drowned. It does not say anything about the spirits coming out in advance, though."

Carol and Barrows mutually triumphed over each other, claiming personal vindication.

"Do you believe in ghosts, Mr. Duke?" asked Miss Tucker in a soft, respectful voice, as if resolved not to antagonize any chance spirits that might be prowling near.

"Call them psychic phenomena, and I may say that I do," said David.

"How do you explain it, then?" she persisted.

"I explain it by saying it is a phenomenon which can not be explained," he evaded cleverly.

"But that doesn't get us anywhere, does it?" she protested vaguely. "Does it—does it explain anything?"

"It does not get us anywhere," he agreed, "but it gets me out of the difficulty very nicely."

"I know a good ghost story myself," said Nevius. "It is a dandy. It will make your blood run cold. Once there was a——"

"I do not believe in telling ghost stories," said Miss Landbury. "There may not be any such thing, and I do not believe there is, but if there should happen to be any, it must annoy them to be talked about."

"You shouldn't say you don't believe in them," said Miss Tucker. "At least not on such a dark night. Some self-respecting ghost may resent it and try to get even with you."

Miss Landbury swallowed convulsively, and put her arm around Carol's waist. The sudden wail of a pack of coyotes wafted in to them, and the girls crouched close together.

"Once there was a man——"

"It is your play, Mr. Barrows," said Miss Landbury. "Let's finish the game. I am ahead, you remember."

"Wait till I finish my story," said Nevius, grinning wickedly. "It is too good to miss, about curdling blood, and clammy hands, and——"

"Mr. Duke, do you think it is religious to talk about ghosts? Doesn't it say something in the Bible about avoiding such things, and fighting shy of spirits and soothsayers and things like that?"

"Yes, it does," agreed Nevius, before David could speak. "That's why I want to tell this story. I think it is my Christian duty. You will sure fight shy of ghosts after you hear this. You won't even have nerve enough to dream about 'em. Once there was a man——"

Carol deliberately removed Miss Landbury's arm from her waist, and climbed up on the bed beside David. Miss Landbury shuffled as close to the bed as propriety would at all admit, and clutched the blanket with desperate fingers. Miss Tucker got a firm grip on one of Carol's hands, and, after a hesitating pause, ensconced her elbow snugly against David's Bible lying on the table. Gooding said he felt a draft, and sat at the foot of the cot.

"Once there was a man, and he was in love with two women. Oh, yes, Mrs. Duke, it can be done all right. I have done it myself—yes, two at the same time. Ask any man; they can all do it. Oh, *women* can't. They aren't broad-minded enough. It takes a man—his heart can hold them all." The girls sniffed, but Nevius would not be sidetracked from his story. "Well, this man loved them both, and they were both worth loving—young, and fair, and wealthy. He loved them distractedly. He loved one because she was soft and sweet and adorable, and he called her Precious. He loved the other because she was talented and brilliant, a queen among women, the center of every throng, and he called her Glory. He loved to kiss the one, and he loved to be proud of the other. They did not know about each other; they lived in different towns. One night the queenly one was giving a toast at a banquet, and the revelers were leaning toward her, drinking in every word of her rich, musical voice, marveling at her brilliancy, when suddenly she saw a tiny figure perch on the table in front of her fiance—yes, he was fiancéing them both. The little figure on the table had a sweet, round, dimply face, and wooing lips, and loving eyes. The fiance took her in his arms, and stroked the round pink chek, and kissed the curls on her forehead. Glory faltered, and tried to brush the mist from before her eyes. She was dreaming—there was no tiny figure on the table. There could not be. Lover—they both called him Lover; he had a fancy for the name—Lover was gazing up at her with eyes full of pride and admiration. She finished hurriedly and sat down, wiping the moisture from her white brow. 'Such a strange thing, Lover,' she whispered. 'I saw a tiny figure come tripping up to you, and she caressed and kissed you, and ran her fingers over your lips so childishly and—so adoringly, and——' Lover looked startled. 'What!' he ejaculated. For little Precious had tricks like that. 'Yes, and she had one tiny curl over her left ear, and you kissed it.' 'You saw that?' 'Yes, just now.' She looked at him; he was pale and disturbed. 'Have you ever been married, Lover?' she asked. 'Never,' he denied quickly. But he was strangely silent the rest of the evening. The next morning Glory was ill. When he called, they took him up to her room, and he sat beside her and held her hand. 'Another strange thing happened,' she said. 'The little beauty who kissed you at the banquet came up to my bed, and put her arms around me and caressed and fondled me, and said she loved me because I was so beautiful, and her little white arms seemed to choke me, and I struggled for breath and floundered out of bed, and she kissed me and said I was a darling, and tripped away, and—I fainted.'"

"Mr. Nevius, that isn't nice," protested Miss Landbury.

"Lover said urgent business called him out of town. He would go to Precious. Glory was getting freakish, queer. Precious never had visions. She was not notionate. She just loved him and was content. So he went to her. She dimpled at him adoringly, and led him out to her bower of roses, and sat on his knee, and stroked his eyes with her pink finger tips, and he kissed the little curl over her left ear, and thought she was worth a dozen tempestuous Glories. But suddenly she caught her breath and leaned forward. He spoke to her, but she did not hear. Her face was colorless, and her white lips were parted fearfully. For she saw a lovely, radiant, queenly woman, magnificently gowned, the center of a throng of people, and Lover was beside her, his face flushed with pride, his eyes shining with admiration. Her fine voice, like music, held everyone spellbound. Precious clasped her tiny hands over her rosebud ears and shivered. She shut her eyes hard and opened them, and—what nonsense! There was no queenly lady; there was no loud, clear, ringing voice. But her ears were tingling. She turned to Lover, trembling.

"'How—how—how funny,' she said. 'I saw a radiant woman talking, and she fascinated all the world, and you were with her, adoring her. Her voice was like music, but so loud, too loud. It crashed in my ears; it deafened me.'

"Lover's brows puckered thoughtfully. 'How did she look?' he asked.

"'Tall and white, with crimson lips, and black hair massed high on her head. And her voice was just like music.'

"The next morning Precious was ill. When Lover went to her she clung to him and cried. 'The lovely lady,' she said, 'she came when I was alone, and she said I was a beautiful little doll, and she would give me music, music, a world full of music. And her voice was like a bell, and it grew louder and louder, and I thought the world was crashing into the stars, and I screamed and fell on the floor, and when I awoke the music was gone, and—I was so weak and sick.'

"Lover decided to go back to Glory until Precious got over this silly whim. But he had no peace. Glory was constantly tormented by the loving Precious. And when he returned to Precious, the splendor of Glory's voice was with her day and night. He lost his appetite. He could not sleep. So he went off into the woods alone to fish and hunt a while. But one night as he sat in his tent he heard a faint, far-off whisper of music—Glory's voice. It came nearer and nearer, grew louder and louder, until it crashed in his ears like the clamor of worlds banging into stars, as Precious had said. And then he felt a tender caressing finger on his eyes, and soft warm arms encircled his neck, and soft red lips pressed upon his. Closer drew the encircling arms, more breathlessly the red lips pressed his. He struggled for breath, and fought to tear away the dimpled arms. The music of Glory's voice rose

into unspeakable tumult; the warm pressure of Precious' arms rendered him powerless. He fell insensible, and two days later they found him—dead."

There was a brief eloquent silence when Nevius finished his story. The girls shivered.

"A true story?" queried David, smiling.

"A true story," said Nevius decidedly.

"Um-hum. Lover was alone in the woods, wasn't he? How did his friends find out about those midnight spirits that came and killed him?"

The girls brightened. "Yes, of course," chirped Carol. "How did folks find out?"

"Say, be reasonable," begged Nevius. "Spoiling another good story. I say it is a true tale, and I ought to know. I," he shouted triumphantly, "I was Lover."

Hooting laughter greeted him.

"But just the same," contended Barrows, "regardless of the feeble fabrications of senile minds, there are ghosts none the less. The night before we got word of my father's death, my sister woke up in the night and saw a white shadow in her window, and a voice—father's voice—said: 'Stay with me, Flossie; I don't want to be alone.' She told about it at breakfast, and it was just five minutes to two o'clock. And an hour later we got a message that father had died at two that night a thousand miles away."

"Honestly?"

"Yes, honestly."

"I knew a woman in Chicago," said Miss Landbury, "and she said the night before her mother died she lay down on the cot to rest, and a white shadow came and hovered over the bed, and she saw in it, like a dream, all the details of her mother's death just as it happened the very next day. She swore it was true."

"Don't talk any more about white shadows," said Carol. "They make me nervous."

"Wouldn't it be ghastly to wake up alone in a little wind-blown canvas tent in the dead of night and find it shut off from the world by a white shadow, and hear a low voice whisper, 'Come,' and feel yourself drawn slowly into the shadow by invisible clammy fingers——"

"Don't," cried Miss Landbury.

"That's not nice," said Carol.

"Don't scare the girls, Barrows. Carol will sleep under the bed tonight."

"I am with the girls myself," said Gooding. "There isn't any sense getting yourself all worked up talking about spirits and ghosts and things that never happened in the world."

"Oh, they didn't, didn't they? Just the same, when you reach out for a cough drop and get hold of a bunch of clinging fingers that aren't yours and are not connected with anybody that belongs there—well, I for one don't take any chances with ghosts."

A sudden brisk tap on the door drew a startled movement from the men and a frightened cry from the girls. The door opened, and the head nurse stood before them.

"Ten-fifteen," she said curtly. "Please go to your cottages at once. Mr. Duke, why don't you send your company home at ten o'clock?"

"Bad manners. Ministers need hospitality more than religion nowadays, they tell us."

"Oh, Miss David," cried Miss Tucker, "won't you go out to my tent with me? I feel so nervous tonight."

"What is the matter?" asked the nurse suspiciously, looking from one to another of the flushed faces and noting the restless hands and the fearful eyes.

"Nothing, nothing at all, but my head aches, and I feel lonesome."

The nurse contracted her lips curiously. "Of course I will go," she said.

"Let me come too," said Miss Landbury, rising with alacrity. "I have a headache myself."

Huddled together in an anxious group they set forth, and the nurse, like a good shepherd, led her little flock to shelter. But as she walked back to her room, her brows were knitted curiously.

"What in the world were the silly things talking about?" she wondered.

"David Duke," Carol was informing her husband as she stood over him, in negligee, ready to "hop in," "I shall let the light burn all night, or I shall sleep in the cot with you. I won't run any risk of white shadows sitting on me in the dark."

"Why, Carol——"

"Take your pick, my boy," she interrupted briskly. "The light burns, or I sleep with you."

"This cot is hardly big enough for one," he argued. "And neither of us can sleep with that bright light burning."

"David," she wailed, "I have looked under the bed three times already, but I know something will get me between the electric switch and the bed."

David laughed at her, but said obligingly: "Well, jump in and cover up your head with a pillow, and get yourself settled, and I will turn off the lights myself."

"It is a sin and a shame, and I am a selfish little coward," Carol condemned herself, but just the same she was glad to avail herself of the privilege.

A little later the white colony on the mesa was in darkness. But Carol could not sleep. The blankets over her head lent a semblance of protection, but most distracting visions came to her wide and burning eyes.

"Are you asleep, David?" she would call at frequent intervals, and David's "Yes, sound asleep," gave her momentary comfort.

But finally he was awakened from a light sleep by a soft pressure against his foot. Even David started nervously, and "Ghosts" flashed into his logical and well-ordered brain. But no, it was only the soft and shivering form of his wife, curling herself noiselessly into a ball on the foot of his cot. David watched her, shaking with silent laughter. Surreptitiously she slipped an arm beneath his feet, and circled them in a deadly grip. If the ghosts got her, they would get David's feet, and in her girlish mind man, a half-acknowledged belief that the Lord wouldn't let the ghosts get as good a man as David.

Wretchedly uncomfortable as to position, but blissfully assured in her mind, she fell into a doze, from which she was brought violently by a low whisper in the room:

"Mrs. Duke."

"Ooooop," moaned Carol, diving deep beneath the covers.

David sat up quickly.

"Who is there?"

"It is I, Miss Landbury," came a frightened whisper. "Can't I stay with you a while? I can't go to sleep to save me—and, honestly, I am scared to death."

This brought Carol forth, and with warm and sympathetic hospitality she turned back the covers at the foot of the bed, and said:

"Yes, come right in."

David nudged her remindingly with his foot. "Since there are two of you to protect each other," he said, laughing, "suppose you go in to Carol's bed, and leave me my cot in peace."

This Carol flatly refused to do. If Miss Landbury was willing to share the foot of David's cot, she was more than welcome. But if she meant to stand on ceremony and go into that awful big, black room without a minister, she could go by herself, that was all. Carol lay down decidedly, and considered the subject closed.

"I don't want to sleep," said Miss Landbury unhappily. "I am not sleepy. I just want a place to sit, where I—I won't keep seeing things."

"Turn on the light, Carol," said David. "You ought to be ashamed of yourselves, both of you."

"That's all right," defended Carol. "You are a preacher, and ghosts don't bother——"

"Don't say ghosts," chattered Miss Landbury.

"Well, what is the plan of procedure?" inquired David patiently. "Are you going to turn my cot into a boarding-house? You girls stay here, and I will go in to Carol's bed. Give me my bathrobe, honey, and——"

"Oh, please," gasped Miss Landbury.

"And leave us on this porch with nothing but screen around us?" exclaimed Carol. "I am surprised at you, David."

David turned his face to the wall. "Well, make yourselves comfortable. Good night, girls."

The girls stared at each other in the darkness, helplessly, resignedly. Wasn't that just like a man?

"I tell you what," said Carol hopefully, "let's bring the mattress and the blankets from my bed and put them on the floor here beside David, and we can all sleep nicely right together."

"Oh, that's lovely," cried Miss Landbury. "You are the dearest thing, Mrs. Duke."

Hurriedly, and with bated breath, they raided Carol's bed, tugging the heavy mattress between them, quietly ignoring the shaking of David's cot, which spoke so loudly of amusement.

"I'll crawl right in then," said Miss Landbury comfortably.

"I sleep next to David, if you please," said Carol with quiet dignity.

Miss Landbury obediently rolled over, and Carol scrambled in beside her.

"Turn off the light," suggested David.

"Oh, yes, Miss Landbury, turn it off, will you?" said Carol pleasantly.

"Who, me?" came the startled voice. "Indeed I won't."

"David, dearest," pleaded Carol weakly.

"Go on parade in my pajamas, dear?" he questioned promptly.

"Let's both go, then," compromised Carol, and she and Miss Landbury, hand in hand, marched like Trojans to the switch in the other room, Carol clicked the button, and then came a wild and inglorious rush back to the mattress on the floor.

"Good night, girls."

"Good night, David."

"Good night, Mr. Duke."

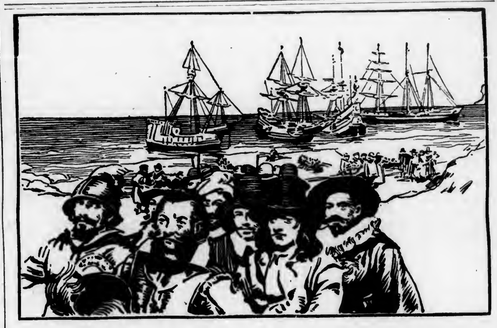
"Good night, Miss Landbury."

"Good night, Mrs. Duke."

Then sweet and blessed silence, which lasted for at least five minutes before there sounded a distinct, persistent rapping on their door.

Carol and Miss Landbury rushed to the protection of each other's arms, and before David had time to call, the door opened, the switch clicked once more, and Gooding, his hair sticking out in every possible direction, his bathrobe flapping ungracefully about his knees, confronted them.

"This is a shame," he began in-



Our Many-Tongued Ancestors

Born of the diverse nations of the earth, Americans appreciate, now more than ever before, the necessity for national unity; one flag, one purpose, one form of patriotic understanding.

A confusion of tongues makes for a confusion of ideas and principles. Everything which goes toward the up-building and maintenance of a one language people makes for national strength and national progress.

It is in such service that the Bell Telephone has played so vital a part. Its wires reach every corner of the country, making intimate, personal speech between all kinds of people a matter of constant occurrence.

But the telephone is no interpreter. If its far reaching wires are to be effective, those who use them must speak the same language. The telephone best serves those who have become one with us in speech.

Yet uniformity of language is not enough from those who would gain the greatest good from the telephone, neither is financial support enough; for complete service makes essential true co-operation on the part of every subscriber.

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gratiatingly. "I know it. But I've got to have someone to talk to. I can't go to sleep, and—— Heavens, what's that on the floor?"

"It is I and my friend, Miss Landbury," said Carol quietly. "We are having a slumber party."

"Yes, all party and no slumber," muttered David.

"Well, I am glad I happened in. I was lonesone off there by myself. You know you do get sick of being alone all the time. Shove over, old man, and I'll join the party."

David looked at him in astonishment.

"Nothing doing," he said. "This cot isn't big enough for two. Go in and use Carol's bed if you like."

"It's too far off," objected Gooding. "Be sociable, Duke."

"There isn't any mattress there, any how," said Carol.

They looked at one another in a quandary.

"Go on back to bed, Gooding," said David at last. "This is no time for conversation."

Gooding would not hear of it. "Here I am, and here I stay," he said with finality. "I've been seeing white shadows and feeling clammy fingers all night."

"Well, what are you going to do? We've got a full house, you can see that."

"Go and get your own mattress and blankets and use them on my bed," urged Carol.

Miss Landbury turned on her side and closed her eyes. She was taken care of; she should worry over Mr. Gooding!

"I don't want to stay in there by myself," said Gooding again. "Isn't there room out here?"

"Do you see any?"

"Well, I'll move in the room with you," volunteered David.

Miss Landbury sat up abruptly.

"We won't stay here without you, David," said Carol.

"I tell you what," said Gooding brightly, "we'll get my mattress and put it in the room for me, and we'll move David's mattress on Carol's bed for David, and then we'll move the girls' mattress in on the floor for them."

No one offered objections to this arrangement. "Hurry up, then, and get your mattress," begged Carol. "I am so sleepy!"

"I can't carry them alone through those long, dark halls," Gooding insisted. Miss Landbury would not accompany him without a third party, Carol flatly refused to leave dear sick David alone in that porch, and at last, in despair, David donned his bathrobe, and the four of them crossed the wide parlor, traversed the dark hall to Gooding's room, and returned with mattress, pillows and blankets. After a great deal of panting and pulling, the little party was settled for sleep.

It must have been an hour later when they were startled into sitting posture, their hearts in their throats, by piercing screams, which rang out over the mesa, one after another in quick succession.

"David, David, David," gasped Carol.

"I'm right here, Carol; we're all right," he assured her quickly.

Miss Landbury swayed dizzily and fell back, half-conscious, upon the pillows. Gooding with one bound landed on David's bed, nearly crushing the breath out of that feeble hero of the darkness.

Lights flashed quickly from tent to tent on the mesa, frightened voices called for nurses, doors slammed, bells rang, and nurses and porters rushed to the rescue.

"Who was it?" "Where was it?" "What is it?"

"Over here, I think," shouted a man. "Miss Tucker. I called to her, and she did not answer."

A low, indistinct sound, half groan, half sobbing, came from the open windows of the little tent. And as they drew near, their feet rattling the dry sand, there came a warning call.

"A light, a light, a light," begged Miss Tucker. The nurses hesitated, half frightened, and as they paused they heard a low drip, drip inside the tent, each drop emphasized by Miss Tucker's sobs.

The porter flashed a pocket light, and they opened the door. Miss Tucker lay in a huddled heap on her bed, her hands over her face, her shoulders rising and falling. The nurses shook her sternly.

"What is the matter with you?" they demanded.

Finally she was persuaded to lift her face and mumble an explanation. "I was asleep, and I heard my name called, and I looked up. There was a white shadow on the door. I seized my pillow and threw it with all my might, and there was a loud crash and a roar, and then began that drip, drip, drip—oh-h-h-h!"

"You silly thing," said Miss Allen. "Of course there was a crash. You knocked the chimney off your lamp—that made a crash all right. And the lamp upset, and it is the kerosene drip, dripping from the table to the floor. Girls who must have kerosene lamps to heat their curlers must look for trouble."

"The white shadow——" protested the girl.

"Moonshine, of course. Look!" Miss Allen pulled the girl to her feet. "The whole mesa is in white shadow. Run around to the tents, girls," she said to her assistants, "and tell them Miss Tucker had a bad dream—nothing wrong. We will have a dozen bed patients from this night's foolishness."

Miss Tucker refused to be left alone, and a nurse was detailed to spend the night with her.

When the nurses on their rounds reached Miss Landbury's room in the McCormick Building, they had another fright. The room was empty. The bed was cold—had not been occupied for hours, likely. They rushed to the head nurse, and a wild search was instituted.

The Dukes' room, No. 6, McCormick, was wrapped in darkness.

"Don't go near them," Miss Allen said. "Perhaps they did not hear the noise, and Mr. Duke should not be disturbed."

So the wild search went on.

But after a time a Mexican porter, with a lantern, seeking every nook and corner, plodded stealthily around a corner of the McCormick.

He heard a gasp beside him, and, turning his lantern, he looked directly into the window, where four white, tense faces peered at him with staring eyes. He returned their stare speechlessly. Then he saw Miss Landbury.

"Ain't you lost?" he ejaculated.

Miss Landbury, frightened out of her senses, and not recognizing the porter in the darkness, shot into her bed on the floor, and David answered the man's questions. A moment later an outraged matron, flanked by two nurses, marched in upon them.

"What is the meaning of this?" they demanded.

"Search me," said David pleasantly. "Our friends and neighbors got lonesome in the night and refused to sleep alone and let us rest in contentment. So they moved in, and here we are."

Both Gooding and Miss Landbury positively declined to go home alone, and other nurses were appointed to guard them during the brief remaining hours of the night. At four o'clock came sleep and silence and serenity, with Carol on the floor, clutching David's hand, which even in sleep she did not resign.

The next morning a huge notice was posted on the bulletin board:

"Anyone who tells a ghost story, or discusses departed spirits, in this institution or on the grounds thereof, shall have all privileges suspended for a period of six weeks.

"By order of the Superintendent."

(To be continued)

For a long time sweet clover was regarded as a weed and a pest, but farmers are finding that it is valuable as a hay for live stock and as a pasture for swine.

A Profitable Pasture for Hogs

W. H. TOMHAVE

The following data comprise a summary of material secured from a swine pasture experiment carried on by the department of animal husbandry at the Pennsylvania State College during the summer of 1919. The object of this experiment was to secure data on the comparative value of the following forage crops: (1) Rape pasture; (2) rape and oat pasture; (3) rape, oats and pea pasture.

Three one-acre lots were seeded to the above pastures. Lot I, rape, seeded at the rate of 10 pounds per acre; Lot II seeded to rape and oats at the rate of 6 pounds of rape and 1½ bushel of oats per acre; Lot III, rape, oats and Canadian field peas, seeded at the rate of 5 pounds rape, 1 bushel oats and 1½ bushels Canadian field peas per acre. The crops were sown as early as the season would permit in the spring of 1919. The pigs were placed on the pasture June 11, 1919, and were removed from the pasture after thirty-five days, at which time all the forage had been consumed in Lot III.

for each pasture, is important, and the greater cost of seed in Lot III was one of the points causing the final cost of producing one hundredweight of pork to be so high in this lot.

The item, "Forage cost per cwt. of gain," is of interest. This figure was secured by taking the seed cost, the cost of labor for seeding, interest on cost of fence, interest on value of land, and depreciation on equipment and fence. These items were totaled, this giving the forage cost per acre.

The value of manure is based upon the manure value of the feed consumed, and the value of manure was credited to each lot in computing the net cost of producing one hundredweight of pork.

The final figure is probably of greatest interest, "The net cost of producing 1 cwt. pork." The cost was $13.60 in Lot I, $14.05 in Lot II, and $19.78 in Lot III.

There were 25 pigs in both Lots I and II during the entire period, while Lot III had but 24 during the greater part of the time, due to one pig becoming injured, and therefore the pig was removed and computation made throughout on 24 individuals.

	Lot I Rape	Lot II Rape and oats	Lot III Rape, oats, peas
Number of days on pasture	35	35	35
Number of pigs	25	25	24
Initial weight of lot (lbs.)	1151.0	1157.0	1083.0
Initial weight per pig (lbs.)	46.0	46.2	45.1
Final weight of lot (lbs.)	1589.0	1579.0	1417.0
Final weight per pig (lbs.)	63.5	63.1	59.0
Gain on lot (lbs.)	438.0	422.0	333.1
Gain per pig (lbs.)	17.5	16.8	13.8
Gain per pig per day (lbs.)	.50	.48	.39
Grain feed required (lbs.)	1221.5	1200.5	1176.5
Grain feed required per cwt. gain (lbs.)	278.7	384.3	352.1
Cost of seed for pasture	$1.30	$1.98	$7.00
Cost of seeding	7.25	7.25	7.25
Forage cost per cwt. gain	3.76	4.06	6.96
Labor for feeding	3.30	3.30	3.30
Total feed cost	44.03	43.35	42.44
Value of manure produced	4.10	4.05	3.19
Cost of grain feed for producing 1 cwt. pork	10.05	10.26	12.74
Net cost of producing 1 cwt. pork	13.60	14.05	19.78

Feeds valued—

Corn	$2.00	per	bushel
Barley	1.80	"	"
Oats	.80	"	"
Tankage	100.00	"	ton
Fence and equipment	58.70	"	acre
Land	100.00	"	"

Interest figured at 6 per cent.

Depreciation figured at 10 per cent.

Cost of labor, seed and seeding, interest on cost of fence, interest on value of land and depreciation on equipment are added to the cost of grain, and the value of manure is subtracted from the total. But one-half of the interest and depreciation item was charged to this experiment, due to the fact that a second crop was secured from each lot, and it was considered fair to make an equal charge to each crop.

The following points are of interest from the table: First, the number of days the test covered was 35, or the pigs were removed from the forage as soon as the forage was consumed in Lot III. At the time the pigs were removed from the test there was still a good growth of rape in both Lots I and II. The total gain per lot was 438 pounds in Lot I, 422 pounds in Lot II, and 333.1 pounds in Lot III, or an average daily gain per pig of .5 pound in Lot I, .48 pound in Lot II, and .39 pound in Lot III. The contrast in this respect is quite important. The next item in the table, viz., the cost of seed

No attempt is made here to draw final conclusions from the data, due to the fact that but one season's work is represented. The advantage of using a mixture, as compared with straight rape forage, does not appear to be great, in view of the high cost of seed in the case of peas. Also, the pigs did not make as great gains on the mixed forage as on the rape pasture. The stand of pasture was excellent in all the lots at the beginning; also, there was no waste of material in any of the lots.

The Red Polled Cattle Club of America has issued the thirteenth edition of its pamphlet, "Facts and Figures," giving general information in regard to Red Polled cattle. This pamphlet is free upon application to the secretary, H. A. Martin, Richland Center, Wisconsin.

The eleventh annual Dairy Cattle Congress will be held at Waterloo, Iowa, September 27th to October 3d. These dates immediately follow the several large state fair circuits of the Central West, and precede by four days the opening of the National Dairy Show at Chicago.

Farm Happenings

AS TOLD BY THE BOSS

The spring crop of pigs has been coming since March 1st. The general run of litters has never been stronger than this year. The litters vary in size from three up to as high as sixteen. Some of the litter of sixteen have been transferred to another sow that did not have as many as she could take care of.

We have been putting our sheep-shearing machine in shape for spring work. It pays to have some extra knives or to have a machine on which these knives can be sharpened.

We sold quite a number of hothouse lambs this spring. They were shipped to dealers, and some were dressed before they were shipped. There was practically no difference in the amount realized per lamb. It has an advantage over selling lambs later in the season, as the ewes can be given a rest and put in shape to breed early in the summer.

The cattle that were put into the feed lot about the middle of November have done well, and will have to be marketed some time in April, as the supply of silage is getting low and will run out some time during the month. Previous experience has taught us that it does not pay to change cattle from a full silage ration onto a dry roughage ration. Unless the cattle market improves, the cattle will be fed at a loss. There is one advantage that we have this year, namely, excellent weights were secured when the cattle were bought in the fall.

The mature brood sow that produced only three pigs did not have a large litter last year, and so will take a trip to the butcher early in the summer.

Creeps have been made for all the pure-bred lambs, so they can be given extra feed to push them along. The creeps are made high enough so that the lambs do not have to stoop down when going to the feed trough.

Several of the farm horses have a long winter coat, and will be late shedding their hair. We plan to clip these horses, as it will mean more comfort to them during spring work and more convenient for the driver.

Two colts were foaled during February, and are getting a good start. These mares can be worked all spring without being laid up for foaling. It seems a good plan to have some of the colts come early on account of farm work.

The entire herd and flock will be gone over in the spring, and all surplus animals culled out, those that are good enough to be retained as breeders to be sold as such, and the balance sold on the market. With the high price of feed and labor it pays to cull the live stock closely.

The long winter has been a heavy drain on the feed supply. It has taken more feed than usual, and the live stock has not been outside as much as in previous winters.

The Washing of Horses

DR. G. H. CONN

As a general practice, washing the body of a horse is to be discouraged. In cold climates it may lead to dangerous diseases, not so much from the fact that the animal has been washed as to the fact that it is not properly dried. Washing should only be resorted to in removing stains and in washing the feet of the horse, when that becomes necessary, also in cleaning the mane and tail. If it does become necessary to wash the body of the horse, too much attention cannot be given to a thorough drying of the skin. When using soap in washing the horse, the greater part of the greasiness of the coat is removed, which is for the purpose of protecting the animal from the cold. The natural gloss of the coat is lost by washing. Until the greasiness of the coat is maintained the animal is in danger of becoming chilled. If it is found necessary to wash the horse, he should be thoroughly dried, kept warm by being properly blanketed, and kept from all draughts.

Washing the legs and belly is done many times to remove the mud, and is usually followed by chapping or a stiffness and cracking of the skin. The use of warm water or the presence of cold weather at the time predispose to this condition, especially if these parts that are washed are subjected to the cold wind. If this cracking of the skin is confined to the heel, it is known as "greasy heel" or "cracked heel." The name is derived from the fact that the oily secretion from the glands in the skin collects around the injuries in the skin. If it occurs on the legs or body, it is spoken of as "mud fever," but it is really caused from the washing and subsequent chapping. Due to the frequent washing that they receive, horses with white legs are frequently found with these conditions.

White legs of horses become soiled very easily and quite often, and to maintain a good appearance it becomes necessary to wash them at times. Warm rain water and laundry soap should be used. The leg should be thoroughly dried by rubbing, and the circulation in the leg should be well established by plenty of massaging with the hands.

It is a well-known fact that horses while at work in the rain seldom suffer from chapped skin due to the wetting they receive. This is because the natural greasiness and the exertion produced by the movements during working keep up the circulation in and the warmth of skin until drying has taken place. Occasionally horses in pasture will suffer from cracked heels, due to the fact that the wind has blown over the parts while wet. This is very rare as compared to those resulting from washing.

Good Horses Sell Well

If you have not a good stallion in your community, you should co-operate with your neighbors and county agent in order that some good sires may be brought in by private parties or leased before the breeding season opens, because: (1) The demand and price for good horses and mules is increasing in cities; (2) farm demand is improving; (3) there is a shortage of good horses and mules of all kinds.

City trade is improving because transportation users of all kinds have discovered, after years of experience, that horses furnish the cheapest source of power on short hauls. On this, Harry Vickers, president of the Fuel Cartage Company, of Chicago, says: "There is work today that the horse can not do—long distance hauling with rapid transportation—but the motor can never take the place of the horse, because the horse can do the work on short hauls just as rapidly and at a lessened cost of 25 to 40 cents on the dollar. Consequently we never allow a truck to displace a team. We will buy a truck to do the work that a horse can not do, but we don't send a truck to do the work that a horse can do. It would be like having a dollar and throwing 40 cents away."—Wayne Dinsmore, secretary Horse Association of America.

Cottage Cheese as a Money Maker

MRS. HELEN GOODWIN

We milk from five to seven cows. The milk is separated, and the cream sold to the local creamery. There is a time in the year when it seems best to feed the skim milk to the growing calves and pigs. However, this period does not last the year round on our farm. We have had better success with spring calves and pigs. We seldom feed either calves or pigs during the winter months, and the surplus skim milk is utilized by making it into cottage cheese. We use a standard dairy thermometer, and are particular in every way to keep up our standard of a high-class product.

The cheese is first drained from the whey in a large bag made of two thicknesses of cheesecloth. From this bag it is put into pint and quart molds which have been lined with cheesecloth. It is left in the molds (which have drain holes in the bottom) over night. The next morning the cheeses are ready for market, and are wrapped in oil paper, covered with tinfoil, placed in pint or quart paper containers, and delivered. If the weather is bad they are sent by parcel post.

Physicians recommend the use of this cheese in the diet, and we try to cater to the class of people in our community who demand a first-class product and are willing to give a first-class price for what they get. My first molds were made from tomato cans. The tops, including the rims, were melted off. Holes were made in the bottom for drains with a nail and hammer. If cheeses are not sold at once they can be kept indefinitely by painting them with melted tallow. For the month of February we sold 150 of the larger cheeses at 50 cents each, making $75; cost of tinfoil, oil paper containers and postage came to $7.50, leaving a profit of $67.50 for our time and trouble. *Indiana.*

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Pennsylvania has passed the century mark in tuberculosis-free accredited herds. Since the officially accredited tuberculosis eradication work was inaugurated, less than two years ago, by the bureau of animal industry, Pennsylvania Department of Agriculture, in co-operation with the federal Department of Agriculture, 772 herds, comprising 12,690 cattle in 47 counties, have been examined and tuberculin tested. One hundred and two herds, containing 1516 cattle, have passed two annual tuberculin tests and are now fully accredited. The bureau has 350 herds, comprising 5600 cattle, on the waiting list to be tested. Additional applications from herd owners are being received daily.

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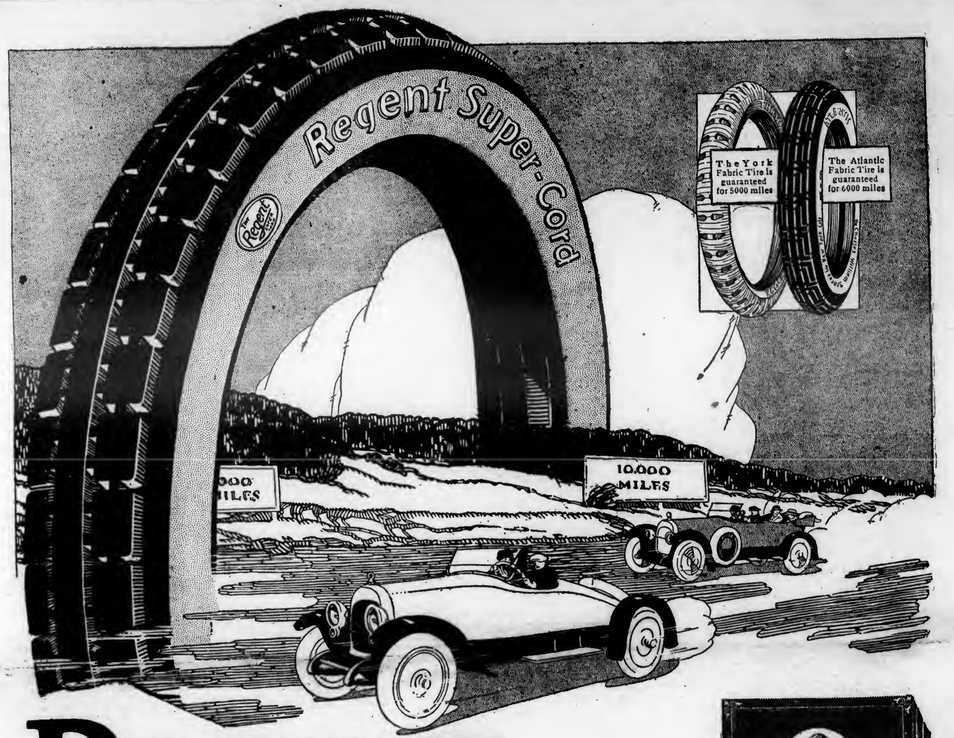

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The Practical Farmer

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THE PENNSYLVANIA STATE COLLEGE
SCHOOL OF AGRICULTURE
AND EXPERIMENT STATION

The Part Lime Plays in Soil Improvement

By A. E. GRANTHAM

NO subject connected with the methods which may be taken to increase the productive capacity of the soil interests farmers more at the present time than the use of lime. The practice of applying lime, while it has been done more or less in the past, has become more general in recent years, due to the better understanding of the relation it holds to the productive capacity of the soil. Lime was probably used long before the Christian era, and in some countries has long been considered next to manure for soil improvement. Experiments with it began early in the history of American agriculture. The use of gypsum or calcium sulphate was quite large up to about thirty years ago. It is a matter of common observation that the application of lime to some soils will give beneficial results, while on others there seems to be no direct action. The value of lime does not consist in the plant food it carries, because practically all soils contain sufficient lime to furnish crops with all they require as direct plant food. The real benefits are indirect, and are due to the chemical, physical and biological effects upon the soil. When a sod or a green manure crop is turned under and goes back into the soil, certain acids are formed. Unless these acids are neutralized by some chemical of a basic nature, such as lime, they may in time accumulate in sufficient quantity to become harmful to the growth of certain classes of plants, particularly red clover, alfalfa, vetches, and other clovers to some extent. Most cultivated soils are slightly acid, a condition which is favorable to the growth of most crops. However, plants excrete from their roots sufficient acids to break up these conditions, so that the aim of the farmer should be to keep his soil in a neutral or slightly alkaline condition. This can best be done by the use of lime. It is only when a soil becomes very acid that crops are injured.

When conditions are right the man with the tractor starts in and finishes the job while the going is good

As a plant food itself lime is essential to all forms of plant growth, being utilized some way by the plant to aid the production of tissues of woody fiber material. If lime should be wholly lacking in any soil, even if the other essential elements are present in abundance, the crop cannot make natural growth. This is particularly true of legumes or clover crops of any kind. The amount of lime required per acre for such crops is nearly if not quite as large as potash requirements. For such crops lime is a direct fertilizer, just as important as any other of the elements which are more commonly used for fertilizing purposes. Very sandy soils or those derived from granite rocks are particularly apt to be deficient in lime, and the fertility of such soils, especially for legumes, may often be increased by the use of some form of lime in which it is made available to plants.

Nearly all soils, especially clay soils, contain more or less of the plant food potash in an insoluble form so that plants can not use it. The action of lime upon such soils is to liberate potash, making it available for the plants. However, it must be remembered that much will depend upon the nature of these clay soils as to the effect lime will have on the liberation of potash.

Lime has another effect upon the mineral compounds of the soil. If phosphoric acid is applied to the soil poor in lime or rich in certain compounds of iron or aluminum, the phosphoric acid is likely to form more or less insoluble combination with these elements and become thereby useless to the plant. If, however, such land is well limed before the addition of the phosphoric acid, the latter will combine with the lime, forming a combination that is more or less soluble and available to the plants. This is a factor to be considered aside from the other valuable effects which lime may produce.

In addition to the action of lime in sweetening the soil, there is brought about a condition which favors the more rapid decomposition of the vegetable matter, such as sod, green manure or stable manure, which may be turned under, hastening the release of nitrogen so that the crop may secure it more readily. In other words, the effect of lime upon organic matter is to break it down and make it more readily available for plant use, hence the soundness of our practice of applying lime in conjunction with the turning under of organic matter. Therefore one of the most important effects of lime on the soil is to reduce to a soluble form the nitrogen that is contained in the organic matter of the stubble, sods or manure which may be turned under.

Aside from the above effects, lime changes the physical nature of certain soils. For example, heavy clay land is made more open and friable, so that air and water can penetrate more readily. A simple way of explaining this action is to say that the soils become granulated or crumbly through the action of the lime. On the other hand, light sandy soils, whose chief defect is the lack of compactness, are made firmer and more compact by an application of lime. This is due to the cementing action of the lime upon the particles of the sand, binding them together more closely. The physical effect of lime, then, is to increase the water-holding capacity of the soil and promote the capillary movement of the water through the soil.

One of the chief benefits of lime is that it promotes the growth of many kinds of bacteria, one of the most important of which is the kind that live in the tubercules or nodules of the leguminous

plants. These little bacteria, which live on the nodules of the roots of clovers, alfalfa and cow peas and similar crops, draw nitrogen from the soil, thus increasing the available supply of nitrogen to these crops. These organisms are largely responsible for the well-known soil-improving value of these crops. Every farmer knows the beneficial effects of clover in soil improvement. Without an alkaline soil these crops cannot thrive, owing to the fact that the nitrogen-gathering bacteria do not find the soil a suitable place in which to develop. Liming before seeding clover or any other leguminous crop thus is a scientific basis for the practical results so often noticed by farmers.

Lime often has a beneficial effect in preventing certain plant diseases. In crop rotation such diseases as club root, which often attacks cabbages, turnips and other vegetable of that group, can be entirely prevented by the presence of an abundance of lime in the soil. On the other hand, lime, like stable manure and wood ashes, would favor the growth of potato scab unless the soil is very acid. In other words, it is best to plant potatoes known to be affected with such disease in soil that is decidedly acid, in order to prevent this disease.

The question naturally arises as to what form of lime should be used. The early agricultural practice of the eastern states was familiar with the use of burned lime only. Good results were evidently noted, or the practice would not have been continued. Of late years considerable attention has been given to the use of ground limestone in place of burned lime. It is true that the ground limestone, if finely ground, will give as good results eventually as the burned product. However, it is well known that the ground limestone is not as soluble in the soil water as the burned product. For this reason it will not correct the acidity quite so quickly. Where ground limestone is to be used it should be in a very fine state of division. At least, all of it should pass through a 60-mesh screen, or, still better, a 100-mesh. Unless a finely ground product is applied it will be necessary to use three or four tons per acre to counteract the acid in one acre, assuming that one ton of burned lime would be necessary. Unless the limestone is finely ground, only a portion of it is fine enough to act immediately, and this is the reason that several tons must be used if immediate results are to be secured. It is also true that the larger particles of limestone will in time aid in correcting the soil acidity, but larger quantities must be used to effect this result.

Whether one should use the burned form of lime or ground limestone should be determined by the cost of a unit of calcium. Into this question enters the purity of the two products and relative cost per ton at the freight station, the distance of hauling and the labor expended in spreading. It should be kept in mind that under ordinary conditions two tons of ground limestone will be needed to serve as effectively as one ton of burned or hydrated lime. The hydrated form of lime has an advantage in that it is a partially slaked form of lime in a fine condition and ready to apply. All the burned forms of lime can be more intimately mixed in the soil than the ground limestone. On account of its very rapid action the hydrated or burned lime may often be applied in small quantities to excellent advantage. Some of the corn growers in the eastern states report good results from an application of six to eight hundred pounds of hydrated lime per acre.

The lime and limestone offered for sale are of two general classes, that containing a high percentage of calcium, and that product which contains a fair percentage of magnesium combined with the calcium. The latter is known as high magnesium lime, and the former as high calcium. On ordinary soils there is very little distinction to be made in these two forms of lime as to their effectiveness. In fact, magnesium has a little larger capacity for correcting the soil acidity than an equal quantity of calcium, so there is no disadvantage in using a high magnesium lime. Magnesium is known to be toxic to plants, but only becomes so when the soil content runs much higher in magnesium than it does in calcium, which rarely, if ever, occurs.

Liming becomes a fundamental practice in good farming, particularly in the states east of the Mississippi river. For the reasons named above, liming should not be neglected even for a year, as the lime affects in so many ways, directly or indirectly, the productive capacity of the soil.

The Farm's Show Window

MABEL G. FEINT

FOR real effect about the home grounds give me the perennials and some good shrubs, vines and trees. The labor of caring for the latter is only a fraction of what the annuals require, and by planning for a few striking samples for each of the seasons, early spring, midspring, summer, fall and late fall, there will be a far more glorious display than can be had with annuals.

In caring for the perennials, generous use of manure mulches is the chief essential for lavish display. All through the season the roots should be shaded and fed by a scattering of rich manure or strawy litter. A light covering of strawy litter after Christmas each year, to be left until freezing and thawing ceases in spring, will prevent winter-kill on really delicate specimens, while most of the hardy ones need nothing, like the foxgloves or delphiniums, which are especially valuable. A few favorites of mine are given, each giving a remarkable showing of color for the labor involved.

Good cows have pulled dairymen through many bad crises

Perennial poppy is easy to grow and unfailing in results. From one big root last year I had twenty-two enormous flowers of a most gorgeous red, some of them measuring fourteen inches across. A certain garden that I know is visited in May by numbers of flower lovers, as the owner has several beds of these poppies containing all the varied shades of rich red, brick and pink poppies he can secure.

Boltonia is little known, by name at least. One tiny root sprout, well fed for a season or two, if carefully staked, will deceive passersby into calling it a lovely shrub, covered with a cascade of white flowers. But it is not a shrub, but a most thrifty growing herb, which grows such a wealth of flowers, each resembling little white daisies, that each plant needs training to a stout post. This plant begins blooming in midsummer, and lasts until frost.

Iris in its varied forms is well worth giving a place, even if it never blooms, as its sword or spike-like leaves give a tropical effect that is very attractive. And when in bloom I know of nothing so beautiful as these aristocratic, though easily grown, lily-like plants. The blooming season is in May, but the foliage is very ornamental all the season. Other good plants are peonies, primroses, red-hot poker plant and hollyhocks.

In shrubs there are a few that stand out as especially effective and quick in giving results. The hydrangeas, spireas, especially Van Houttei, the mock orange and the lilacs are especially worth while, and, if properly selected, give year-round results. Many of these can be grown from cuttings made from last year's wood thrust into soft loam and covered with a glass jar.

The roses are a class by themselves and perhaps best of all, if given generous feeding and protected from insect enemies. The ramblers are the writer's favorites, grown big and high over trellises and arches, while the baby ramblers should find a place, if possible. I know one woman who says rooting of roses is so easy that she seldom fails to get a start from even a fine flower cut with a generous stem. Her method is similar to that given above.

New York.

A Farm Labor Solution

EDWARD B. SELBY

FARM labor in our immediate neighborhood is almost a negative quantity; there is practically none. The majority of the farmers here work a small piece of their land themselves, and let the rest out on shares to negro tenants, who proceed to tickle the top of the soil and stick in a few tobacco plants and a little corn, with very little cultivation and less fertilizer. Of course, the results are evident—a barrel or two of corn to the acre, and a little of the poorest quality tobacco. The rest of their time they spend oystering or fishing, though occasionally you can persuade one of them to "help you out" for a day or two for the small consideration of two or three dollars and board.

Our answer to this problem has been to buy all the labor-saving machinery that we can afford, and we are adding to it every year. We use the modern four-cylinder, two-wheel tractor, which pulls two 14-inch plows; also have a 7-foot double-disk harrow and a two-row cultivator to use with it, and have ordered an 8-foot-cut mower to be delivered this summer. In using all these implements the operator sits on the seat of the implement, and controls the tractor and implement from there, and I find that I can do much more work than with horses, and do it easier and cheaper. Just for example, I had a field in corn last year that it used to take one man four days to cultivate with a horse and hand cultivator and two days with a pair of horses and a sulky cultivator. I cultivated this field with the tractor in 9¼ hours, did a better job, broke down less corn, and the cost for gasoline and oil was about the same as horse feed in either case.

Of course, we have to use a corn planter, cutter, grain drill with fertilizer and grass seed attachment, binder, etc., also have a small grist mill and wood saw. With this equipment two men and a boy handle a 245-acre farm with very little extra help except in planting tobacco and threshing wheat.

Girls and women may be very efficient on a dairy or light truck farm, in fact they are excellent at such work as picking berries and fruit, but in our work they are useless, as it is all too heavy for them.

All in all we are doing the majority of our work with machinery, and in a few years we expect to do practically all of it so.

Maryland.

The battlefields of France have already begun to yield the harvests which France needs so urgently to repair the waste of war and which looked so remote immediately after the fighting ceased. Modern co-operative farming methods, imported from America, are used in the reclamation near Reims under the direction of Major Alexander G. Scott, of Mississippi, and Captain Robert Hartshorne, of Red Bank, New Jersey.

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Statement of the ownership, management, etc., required by the Act of Congress of August 24, 1912, of The Practical Farmer, published semi-monthly at Philadelphia, Pa., for April 1st, 1920.

State of Pennsylvania, County of Philadelphia } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Edward T. Walker, who having been duly sworn, according to law, deposes and says that he is the publisher of the Practical Farmer and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publishers, editor, managing editor, and business managers are:

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Publisher, EDWARD T. WALKER	121 N. 7th St., Phila., Pa.
Editor, THOMAS H. WITTKORN	121 N. 7th St., Phila., Pa.
Managing Editor, EDWARD T. WALKER	121 N. 7th St., Phila., Pa.
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2. That the owners are: (Name and address of corporation, and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

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(Signed) EDWARD T. WALKER, Publisher.

Sworn to and subscribed before me this 26th day of March, 1920.

(SEAL) (Signed) MARY B. HALPIN, Notary Public. Commission expires February 9, 1923.

APRIL 15, 1920

A Bill which Needs Your Help

IF farmers don't speak out decidedly and quickly, there is a possibility that the long-sought Capper-Hersman bill legalizing co-operative marketing will die in committee. In spite of the sentiment which has been developed for this bill since last fall, it still needs considerable pressure from the folks back home to make congress realize that this bill must be passed. Some try to say that it is class legislation, and of right should stay and die in committee, just where it is now. They forget that all the rights asked by the bill are now enjoyed by joint stock companies under corporation law, and that farmers now only ask for the same privileges. The recent treatment of officials of milk producers' associations when they were acting only in good faith and the many intimidating remarks of public officials cannot be allowed to continue if this country is to be run on the equal rights plan intended by the founders. The real farm organizations represented at Washington have done all they could to secure favorable action on this bill, and now make a last appeal before congress adjourns to have those most interested in the outcome of the measure tell the lawmakers their desires. Until such a bill as this has become a law, many co-operative enterprises in the country, which will benefit the city people nearly as much as those outside, will have to delay action.

The Hobo is a Passing Race

TRAMPS, just common, everyday hoboes, have long been a thorn in country people's sides. How much damage they have caused by barn fires, etc., or disease spread from place to place possibly will never be known, but today they are a passing race. That is, if their non-appearance for charity meals in the city is any indication. Here in Philadelphia we have a Sunday Breakfast Association, a mission which only a short time ago thought nothing of having from 900 to 1000 hoboes for a free Sunday morning meal. The other Sunday less than 100 asked to be fed, and most of these were old men who had passed the stage when they could take a new start in life. The mission officials credit the now famous wartime order "to work or fight" with a lot to do in reducing their number of weekly guests, because during the war the number dropped to about 200. Wartime prohibition also had its effect on the Sunday morning diners of coffee and doughnuts, but it has remained for national prohibition to turn numberless hoboes into hard-working men. The efforts of the mission are now directed largely along rescue lines and religious work. Arrests in the city for intoxication during the last six months of 1919, that is, the wartime prohibition period, were only 6500, as compared with 17,114 during the first six months under the open saloon, or a decrease of 62 per cent. Arrests from all causes showed a decrease of 40 per cent., which would seem to indicate that liquor had a marked influence on crime. Almost daily the newspapers are telling of the marked falling off of prisoners in the county jails, and we seem to be coming to a time when country folks will have little to fear from the great army of hoboes which drifted from place to place.

A New Bait for Easy Marks

POSSIBLY the caution is needless to farmers, but many city and suburban people are being victimized by some nurserymen with "bearing-age trees." In most cases this is merely overgrown nursery stock which should have gone to the brush heap when it was not sold at the proper transplanting age. Nurserymen who value their reputations would not send out such trees, as their chance for successful growth is too small. The various claims made for these old trees, of course, appeal to people who think there is a short cut to having fruit from their own trees, but if they would stick to standard methods and varieties their fruit crop would be far more satisfactory. Good nursery stock this year is rather scarce, but it can be had from reliable dealers. If you can not get just the varieties you want, it may be better to wait until they are on the market again than to plant something which will prove unsatisfactory. Apple trees especially are planted only once in a lifetime, so that mistakes made now will be constantly brought to mind in future years. A little care for the trees now bearing or just growing will pay big with the present demands and prospects for fruit.

Milk Matters are Topsy Turvy

IT seems as if it matters a great deal just how your raw milk is consumed when it comes to what you are getting for it. Dairymen located in sections where most of the milk is condensed, evaporated or made into butter are spending a lot of time wondering what is the best thing they can do. They are not without cause, either, for since the war ended, things have been happening fast in the milk product industry. During the war the condenseries were seriously taking the milk from the market milk consumers, but now stocks of condensed and evaporated milk are piling up because exports have fallen off considerably, imports have come from New Zealand and Australia, and domestic markets have slumped. Where price agreements have been made with farmers the condenseries are naturally trying their best to get out of them, but, on the other hand, city dealers have expressed a willingness to take all the milk offered to them. Increasing the per capita consumption of milk is now the great problem, and definite steps have been taken along this line by several firms and organizations interested in the dairy industry. Butter substitutes have been especially favored lately by high prices to find many new users, much to the injury of dairymen. European butter from Denmark and Holland to the extent of nearly six million pounds has also lately come into this country, and is said to have affected the domestic butter markets as far inland as Chicago. All in all it is a serious time for dairymen. It is hard to lay down a rule as to what they should do, because conditions vary so for almost every locality. It is a time for study and judicious use of a lead pencil. Good cows, good methods and a love of the business have tided over many other dark periods, and the same today will go a long distance to finding a way out.

Keeping Feed from the Wild Cats

LIBERTY bonds are selling below par, some of them considerably below their face value, but that is no reason why they should be sacrificed. The woods are full of dapper chaps with smooth ways who work all kinds of schemes to exchange these "depreciated" bonds for something which promises lots but seldom produces anything. Those who bite at these baits and exchange something for which they have paid full value for very often only "a scrap of paper" will surely live to regret it. Present prices are no indication of the real value of Liberty bonds, and are only natural tendencies when 22,000,000 people suddenly become holders of government securities. The interest always has been and will be paid when due, and where the whole faith and honor of the United States are back of the bonds, as well as the wealth of the nation, there is little fear that the principal will not be paid. Indeed, this is just the time for those who have extra funds to invest them in Liberty bonds, because they can be bought at a price which will net a yearly return considerably above the amount specified on their face. If you haven't looked at your bonds lately to clip the coupons, you had better do so, and those which need to be exchanged for others with all the coupons on them can be attended to. There is no charge for this exchange, and your banker will be glad to advise you regarding them.

The Ladies Lost, But Still Fight

IN the last issue we predicted, almost, that women would have the right to vote by this time. Luckily we told the truth about political pressure in Delaware and did not allow our enthusiasm to carry us over facts to be reckoned with. The vote in the legislature of that small state, when it was finally taken, was decidedly against granting women the ballot, and while there has been some talk of reconsidering the action, public discussion of the matter for the time being has been dropped. The suffragists are training their guns now on some of the southern states, and have not given up all hopes of voting at the next presidential election.

Bulletin Helps for Farmers

"Harlequin Cabbage Bug and Its Control" is the subject of Farmers' Bulletin No. 1061. This pest of the cabbage family is sometimes locally known as "calico back," "fire bug" and "terrapin bug," and threatened to become a serious menace north of its usual home until checked by extreme low temperatures. This bulletin gives complete control measures, and should be read by all those who have been troubled with this cabbage enemy.

Laborsaving Tools for the Gardener

R. B. RUSHING

Not so long ago the truck farmer and market gardener looked upon the general farmer with a bit of envy. Most of the labor-saving machinery was then his, but, thanks to the many changes that have taken place, the market gardener of today is, or can be, equipped with labor-saving machinery to an almost equal degree. These implements are labor savers, and everything that saves labor saves money for the gardener, as a great deal of his current expense is for labor.

Farm and garden implements can be divided into four classes—those used to prepare the ground for crops, those used to plant the crops, those used to cultivate them, and those used for harvesting. Also, manure spreaders and machines used to distribute lime, fertilizers, etc., might very well be placed in another class. Taking this last class first, in a garden of ten acres or more, where the gardener has the opportunity to get plenty of manure, it will pay to invest in a manure spreader. And the time has already come when nearly all market gardeners use more or less commercial fertilizers or lime, or both, so that a machine to apply these is almost a necessity. The only trouble the market gardener will find with the manure spreader is that on his soft soil it will pull hard, and he will have to use two teams lots of the time.

It hardly seems necessary to say that the turning plow heads the list of implements to prepare the soil, but the disk to cut the top of the soil before plowing is a twin brother to the plow. Then, again, the disk must be used after the plow. The Acme harrow is about the best leveler and clod crusher there is in the harrow line, and by the use of the disk and Acme a piece of land can be put in fine shape, with the use of the plank float and the land roller at times.

To sow the seed, a seeder or garden drill is almost indispensable. A number of good ones are on the market, and I am not out to say which is best. The seeder should be ready at all times, as some seeding is done nearly every day from April to August, sometimes much later, and sometimes earlier. The wheel hoe comes in to do its work, and there are so many places and ways to use the wheel hoe that I think you must get one and use it yourself to appreciate it.

For small hand tools, I use a little tool with four curved teeth, attached to a handle, the same as a hoe, which I think a great deal of where the ground becomes hard in closely planted crops. It takes hold of the ground in fine shape, and does excellent work.

I use a horse cultivator where the rows are sufficiently wide. One with five shovels is often very useful where ground gets hard or grass gets a start. In a berry patch the five-shovel cultivator is the best I have ever tried. A shovel or marking plow is very necessary also to mark out rows or to throw dirt to the plants.

For a garden of as much as ten acres the tools I have mentioned—a manure spreader, fertilizer distributor, walking plow, disk, Acme and smoothing harrows, plank drag, perhaps a roller, depending on the kind and physical character of the soil, a seed drill, two or three wheel hoes, a five-tooth cultivator, a shovel or marking plow, and perhaps a potato digger, if many potatoes are grown, will be necessary, with small tools such as hand hoes, rake, spades, shovels, etc.

But, say, I have waited to the very last to mention the most important of all garden tools. I have not tried it yet, but I do firmly believe it is practical. Perhaps you can guess. The garden tractor. You will be likely to see it advertised. I have not yet had the chance to see one, but think I shall, and perhaps may get one, if they suit me right well. They claim that they can do about everything that can be done, using most all kinds of attachments, and I am pretty well satisfied that they are a real success, although they are new. The large tractor in the field has proven a wonderful success, so why not the baby tractor to the market gardener?

It looks like they would be much better than old Dobbin in the garden, as you can have absolute control of them, while the horse is sometimes hard to manage and gets on about everything that is inside the garden, and you know how that is on the temper as well as the garden stuff. I have had to just walk off and sit down till I cooled off when the horse would get ugly and begin to tramp on the cabbage, onions, beets, beans and I don't know what not. But not so with the tractor. They can be guided at will and kept where you want them; stopped at will, and started the same. I believe they are easier turned around than a horse, and if my son carries out his plans, one will be in use on our place before very long, as he is putting up some pretty large plans to me, and I like most of them. I believe that every father who has a son in the garden business would do well to look up the garden tractor to save him the labor and aggravation that is necessary without it.

"Well," says one, "if we have all these things and raise a crop of fine stuff, and the price goes down, what will we do?" My plan has always been to raise the stuff, sell what I could, then use ourselves or feed the rest to my hogs and give some to the neighbors. Try it.

Illinois.

Trees for Lawn Planting

That well-selected hardwood trees, such as oaks and elms, should be among the first choice in the selection of trees for lawn planting is pointed out by W. E. Bontrager, landscape gardener at the Ohio Experiment Station. When thoroughly established they will grow to maturity almost as quickly as any other species. It has been found nursery-grown stock of a permanent species gives better satisfaction than trees taken from forest areas and planted in lawns, as the nursery stock has been accustomed to sunlight on all sides, and growth is checked but little when moved into permanent quarters. White ash, American linden or basswood and American beech have good landscape values. The soft or silver maple is quite popular for lawn planting, but it cannot be considered as a permanent tree, because it is easily damaged by high wind, and in old age the tree often has a dilapidated appearance. The sugar maple is a better tree.

Today in the Orchard

E. L. VINCENT

Early summer work for the orchard with our folks consists in great part in giving the final sprayings for insect pests. In this respect we certainly have had great results. The orchard on a piece of land we bought a few years ago was old, and had been greatly neglected, so that we got very little fruit from it, and none that was really fit for first-grade marketing. By spraying we brought the trees up—also by trimming—so that for a number of years we have harvested some choice fruit. Last season our crop was excellent, and sold at top-notch prices.

The farmers of our neighborhood put their forces together and made a thorough job of spraying the orchards on every farm for a stretch of three miles. We liked it so well we will keep it up.

Then, another job we look after just now is to take away the brush trimmed from our apple trees, if this has not already been done. As a rule our orchard is kept in grass, and if there is anything I dread it is to strike a lot of dead, dry brush under trees when running the mower. This ought all to be taken away and burned before haying.

One thing connected with pruning I feel called upon to do whenever there is time, and that is to cut away the suckers which are so persistent about growing at the base of bearing fruit trees. They take up the substance of the soil, and bear no fruit. Every last one of these I try to cut in the early part of the year.

A moist, showery day is good for transplanting small fruit trees. I set out sixty such trees one showery day, and not one of them died. I had a little chap with me to hold the trees up while I pulled the earth about the roots carefully and packed it down. We had on our raincoats, and enjoyed the day and the work immensely.

New York.

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Care of the Gas Engine

DANIEL PROWANT

What would the average farm do without the little one or two-horsepower gasoline or kerosene engine to pump water, wash clothes, skim milk, clean seed grain and a hundred and one other odd jobs they are called on to do almost every day? And yet I don't believe there is any other piece of farm machinery that gets as little care as the engine, but it isn't because it don't need it. If the ignition system and carburetor are working properly, most gas or oil engines will run, even if almost every other part is ready to fall to pieces. There is too much tendency to let the engine run as long as it will do so, even if it is quite evident that it is in need of a good going over and having worn parts tightened up or replaced with new ones.

A knocking sound about the engine is too frequently neglected, and yet this is a rather serious matter, if it is not given proper attention. There are various causes for this sound, some being more serious than others, but any case should have prompt attention. A carbon knock is quite frequent, and, while it is not dangerous, it will not get any better by neglect, and is very annoying. This can readily be detected by the fact that no knock is noticed until the engine becomes warm. This carbon deposit will become red hot when the engine becomes a certain temperature, causing premature explosions, loss of power and a good deal of trouble. This is frequently mistaken for improper timing of the engine or magneto, and as the actions of the engine are very similar, it is not remarkable that this mistake is so often made. The principal difference is that carbon troubles appear after the engine becomes hot, whereas if the trouble was improper timing, the difficulty would be experienced when trying to start the engine.

The remedy for carbon troubles is to remove the cylinder head and scrape off the carbon with a dull knife. After the head is off, there will be noticed at the end of the cylinder a space, varying in length according to the size of the engine, that the piston does not cover in its stroke, and it is here that the carbon deposits will be found. Carefully scrape off all of it, being careful not to scar the walls. The head of the piston should also be carefully cleansed of its carbon, as should also the valves and valve setting in the head. After the worst of the carbon has been removed, wash the parts with kerosene until they are clean and bright. After this operation, if carbon has been causing the trouble, the engine should operate as well as a new one. Carbon deposits are usually caused by using either too much or an improper grade of cylinder oil.

A hard, metallic knock usually comes from a loose or badly worn connecting rod, and the knock may be either at the wrist where the rod connects with the crank shaft, or it may be where the rod connects with the piston. If it is the latter, the cylinder head will have to be taken off in most cases, the rod disconnected at the crank shaft, and the piston pushed out and the nuts tightened up. This must not be tightened perfectly rigid. There should be just enough play at this joint so that the piston swings free and easy and no knocking noise is heard. In putting the piston in again it must go in the same way it was taken out, and when the rings are reached they must be depressed with the fingers, one at a time, and the piston pushed in. This is rather a slow job the first time.

If the knock occurs at the wrist where the rod connects with the crank shaft, the operation is much simpler, but no less important. This wrist is divided into halves, and is kept tight by means of two bolts with lock nuts and keys. Between the two halves of the wrist will be noticed a number of thin shims, and if the boxing is so badly worn that it can no longer be tightened up, it will be necessary to take off the rear half of the wrist and take out a sufficient number of these shims to permit the rod to be adjusted properly. The wrist should be tightened just enough so that there is no lost motion, nor enough play to cause a knocking sound; yet it must work free and easy. If it is tightened up too much it will make the engine hard to crank, and will cause unnecessary wear. If the boxing is badly worn, a new rod will be necessary. If left go as long as the engine will run when a knock is noticed at this point, the usual result is a pretty general wreck when it finally breaks off entirely.

A piston slap can be recognized by being a sharp cluttering noise, rather than the hard, metallic knock of loose rods. This noise is caused by either the piston or the cylinder walls becoming worn on one side so that they are no longer perfectly round and smooth. This may be caused by a number of different things, such as poor material, bad rings, or the engine being out of alignment, but the most common cause is faulty lubrication. Usually it is caused by not getting enough oil or by using a low-grade oil without sufficient body to stand the test that is required of cylinder oil in an engine, and is more apt to occur in using kerosene as fuel than when gasoline is used. In nearly all cases the trouble is found to be the walls that are cut, rather than the piston damaged. About the only remedy for this is to send the engine back to the factory for a general overhauling, and order the cylinder re-bored and fitted with oversize rings. In any case, never neglect a knock in any part of the engine. It will not get any better by continued use, and it may wreck the engine and cause someone to be seriously injured sooner or later if it is not looked after.

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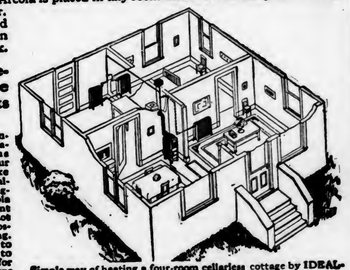

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A Farmer Who Did Not Go West

TIMOTHY CLOVER

"I remember harrowing that field across the road, and thinking all the while I was doing it how I was going to get away from the old farm if only the Lord would let me." This is what H. F. Lieberknecht, of York, Pa., told us as the recollection of his boyhood days. "It was back in '81. We raised corn on that field that year. It was the sickest looking stuff you ever saw, yellow and stunted and weary looking. There were 20 acres in corn, and we husked 400 bushels of ears from the lot. How I would have liked to have gotten away from it all."

"Why didn't you leave?" the writer asked. Everybody was going West about that time.

"I would have, all right," replied Mr. Lieberknecht with a smile, "but before I got a chance to leave, we got to growing better corn. It seemed as if we improved the crop all at once."

This sounded interesting. "What did you do to improve the yield of crops?" asked the writer, taking out his notebook and preparing to set down all the facts of rotation, deep plowing, legumes and what not. Bang! came the answer: "We started using fertilizer." It was said with such a sureness and in such a way that it gave you an impression that there was nothing more to be said. The writer closed up his book and put it in his pocket.

"I don't know what kind the fertilizer was, nor how much it cost," continued Mr. Lieberknecht, "and I don't suppose my father did. It made better crops for him, and so he used it, and kept on using it, and our crops kept getting better, and are better year after year. Last year we had 4000 bushels of ear corn from 26 acres. We always get an average of 30 bushels of wheat, often get 45, and did one year get 52 from one field." "And fertilizer did all that?" we asked Mr. Lieberknecht. "Well, perhaps not entirely, but at least it gave us the start and has been helping us right along."

This is typical of the attitude of the farmers in York and Lancaster counties. They began using fertilizer when it was first introduced, and have been using it ever since in increasing amounts. These counties are among the best, if not the best, in the entire country. And it is not because they were naturally rich. They were not; only fairly fertile. They were not nearly so fertile as the soils of Iowa, Illinois and other western states. But they yield better, mainly because they are farmed better and with an eye to improvement.

Mr. Lieberknecht is a typical farmer of the section. He has 84 acres of land, which support 18 head of milk cows, 115 head of hogs and 4 head of horses. He feeds to the cattle nearly everything he raises, and markets butter and hogs—an ideal system for conserving soil fertility.

Naturally he is producing lots of manure for that farm. It seemed as if he might not need to purchase fertility. "You have lots of manure. Why don't you depend upon that to keep up your soil? Why do you buy fertilizer?" the writer asked. "I need the phosphoric acid, and I don't get that in the manure. At least I don't get enough," he replied. "Yes, but you use complete fertilizer," was my comment. And he did, several tons each year. Mr. Lieberknecht looked us over, from head to heels, and then he said, very slowly and carefully: "Young man, you were not raised on *this* farm. I was, and that makes a difference in the way we look at things. You never saw the corn we used to raise nor the farm we used to have. I know how I changed all that, and it wasn't by standing still. We have been improving our crops year by year, and we are going to keep on improving them year by year. We don't want to go back, and we don't want to stand still. When we first used fertiilzer, we didn't know much about it, what it was or what it contained. Now we know more. We know we can get along without fertilizer, and we also know that we will grow smaller crops. We know what to use and just keep even, but that don't suit us. I have always said that when I couldn't go ahead I was going to quit farming. I won't just move somewhere else. I will quit. No, sir, I am not going to stand still on this farm just to save a little money in fertilizer. Besides, I would not save money at all. I would simply be losing the good profit the fertilizer makes for me."

There wasn't much more to be said, so we thanked Mr. Lieberknecht, and drove away. We had a feeling as we left that this man had pretty well gone to the bottom of things and knew his business well. At any rate, the evidence was growing on both sides of the road along which we were driving, and it was pretty good evidence, too.

Maryland.

Speaking of Rats

A. E. S. L.

I have seen in your paper many ways of getting rid of rats, but not seeing what I believe to be the best way, I will give you my plan. If you wish to publish it, it may be a blessing to someone, as it was to me after having decided that the rats would have to go or I would have to move. An old gentleman told me to set a deadfall, the larger the better. I did this by making sticks like a figure 4, and taking a door 4 by 6 feet, set it on the floor of the kitchen, and went to bed, hoping to have a few hundred rats in the morning. To my surprise, I got one rat, but I never saw or heard another rat about that house as long as I lived there. I have seen this tried many times since with success.

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A New York Drainage Project

Citizens around Verona, N. Y., are very much interested in a swamp drainage project being conducted by C. A. Goff. Its area is about one thousand acres. It will require a main ditch five miles long and two miles of laterals to properly drain it. The main ditch was started about the second week of December, 1919. Four or five men have been working on it throughout the winter. After six weeks of work about three miles had been completed.

Old residenters in the vicinity assert that the ditch could not be dug in winter by any of the old standard methods. This ditch is being blasted with dynamite, a ditch digger that refuses to acknowledge Jack Frost's supremacy. A row of holes was driven into the earth, down the center of the proposed ditch, 2½ to 3 feet deep and about 4 feet apart. A pound and a half of 40 per cent. low-freezing dynamite was tamped in each hole. An electric blasting cap in each hole, connected up in series on the surface with pieces of copper connecting wire, fired the charges. Thirty holes were loaded at a time. That was the capacity of the blasting machine, and, besides, it is not advisable to leave the dynamite in the cold water-filled bore holes any longer than it takes to prepare that many charges.

The ditch when completed was about three feet deep and five to six feet wide. No shaping up with shovels was necessary. It is confidently expected that the drainage work will have so drained the thousand-acre area by plowing time this spring that a large part of it can be cropped in the summer of 1920.

The blasting is being done by local men having had no previous experience in the use of dynamite. Mr. Goff conceived the idea of effecting the drainage that way, and learned how to do it properly by attending a ditch-blasting demonstration under the auspices of one of the New York farm bureaus last summer, and he and his men are having no difficulty in getting desired results.

Disking Land for Oats

Is it best to plow or disk land for growing an oats crop? This is a question many farmers ask at this time of the year.

Tests at the Ohio Experiment Station show that there is not much difference in the ten-year average yield from the two methods of preparing the seed bed. The disked land has given slightly larger yields of both grain and straw, 56 bushels being the average for the ten-year period. Plowed land seeded the same time as the disked land has averaged 54 bushels for the same period.

However, at Wooster this test was conducted on a silt loam where weeds have been held in check for a number of years. Officials suggest that on heavier clay types of land, where the ground is badly infested with weed seeds, plowing should be followed to hold the weeds in check.

Other tests with oats show that 10 pecks of seed per acre may be regarded as a full seeding, as there is a gradual increase in the yield up to and including the 10-peck rate; but 12 pecks to the acre generally causes a decline rather than an increase in the yield.

Oat seed secured from North Dakota has given favorable yields at the Ohio station, and if home-grown seed is scarce, the northern-grown seed may be used without fear of lack of adaptation.

Using Potato Machinery

J. STUART GROUP

Replying to an inquiry of one of your readers in reference to implements used for cultivating and digging the potatoes described in my article in the February issue, would say that the last harrowing is done very soon after the plants appear above the ground. We then cultivate with a one-horse, five-tooth cultivator, generally four to six times, depending on conditions. My reason for not using a riding cultivator is that our soil is of a clayey nature, and it is necessary for a horse to walk through the rows twice with that implement. I don't like to see any more tramping than necessary. We only use one horse in our sixty-tooth spike harrow. I might add that we put about a 50-pound stone on our cultivator the first time we go through, but after that cultivate only deep enough to keep a shallow mulch between the ridges.

We use an elevator digger, but no picker attachment, as we have too many stones to contend with. We have been using elevator diggers for fifteen years, and find them very satisfactory. *Pennsylvania.*

Britons Buy American Honey

American honey is becoming increasingly popular in Great Britain. On account of the shortage of sugar the English people have taken readily to its use, and it now seems probable that the demand will continue even after sugar again becomes plentiful. The clear strained honey in the glass has the best sale, the preference being for California honeys, according to reports issued by the bureau of markets, United States Department of Agriculture. In 1914 the total importations by the United Kingdom were approximately 2,600,000 pounds. By 1918 this had increased to 36,500,000 pounds, valued at $13,150,000. The United States contributed more to these totals in 1918 than any other country, its share being 16,000,000 pounds, valued at $5,500,000.

Farmers' Week at Penn State

The annual summer Farmers' Week at Pennsylvania State College will be held this year June 22d to 24th. The program is now being prepared, and will include demonstrations and talks on the following subjects: Fruit growing, vegetable gardening, soil fertility, farm crops, farm machinery, dairy husbandry, live stock, poultry, botany, timber and wood lot, and the women visitors will receive the benefits of home economics instruction. Every angle of farm work and production will be touched. Prominent outside speakers will be present. Invitations will be extended to Governor Sproul, United States Secretary of Agriculture Meredith, State Secretary of Agriculture Rasmussen; President Thompson, Ohio State University, and H. J. Waters, editor of the Kansas City *Star*.

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Brooding and Feeding the Chicks

F. V. L. TURNER

With warm weather there always comes the call to incubation and brooding of chicks. In the majority of cases little thought hangs on the all-important part of success in bringing to maturity birds that are really worth their cost; every other consideration is overshadowed by the single purpose of hatching and rearing. It is not the purpose of this article to dwell—although it might be well to do so—on the oft-repeated necessity for selecting for reproductive purposes only the trap-nest proven breeders, so much as it is the purpose to tell more about the ease of rearing in various ways. Opposed to rearing successfully are the failures of last year, the year before and all the past years back to the time when the first chick was reared artificially.

While we have it in mind, let us tell you how very much nearer perfection the ancientts came to successful artificiality in reproduction than we do now with all of our improvements. According to the consular agents reporting at the time, but a few years back, the incubators used thousands of years ago (actually over five thousand, as history records it) are still in use in the country of the Nile, the Egyptian community hatchery, built of sun-baked brick, operated by camel manure as fuel, and without a thermometer. In those days of almost prehistoric incubation there was no such thing as a thermometer, and none is used now, though they are known in every nook and cranny of the earth.

In these brick incubators (they were buildings large enough to incubate 100,000 eggs, house the operator and his apprentice and the donkey—the transportation system to the nearest settlement) the temperature was maintained at the same point by the sense of the operator, his hands being his only guide to the exacting temperature of the egg in hatching. Eggs were brought to these central hatcheries by the residents of the section, some a day's travel distant, and the chickens resulting were called for at the end of twenty-one days. Strangest of all things in this connection, the hatches averaged over 90 per cent. A small number of chicks were left with operator as his pay. After these were reared they served as the money for which his year's supplies of eats and clothing were traded. Strange, again, there was little mortality among these chicks when they reached their owner's home.

Most of the grain fed to these chicks was wheat; corn was unknown to the Egyptians. Probably weed seeds and insects constituted the major portion of their food, and hovers were improvised, home-made affairs, conserving, as a function paramount to other things, the natural heat of the babies.

So far as the writer has been able to ascertain, there are few temperate countries that will not permit the brooding of chicks without other heat than that incident to season and the natural heat of the chick. In large commercial plants, heatless brooding would hardly be possible for many reasons, but with these we are not dealing. The small home hatchery is our object, and with that alone we will deal.

Big hatcheries in February and March daily ship thousands of chicks hundreds of miles without loss other than accident and that due to inherent weakness. A ventilated pasteboard box without heat is the container for these one or two-day-old chicks.

A human being can sleep outdoors all winter without injury, if his or her clothing is adjusted to conserve body heat. The fireless brooder is easily adjusted to conserve the heat of the chick. For twenty years the writer has used heatless brooders or hovers. All through Pennsylvania the farmers' wives used shallow, bottomless boxes. From the inside of the tops hung, about an inch apart, strips of Canton flannel or other similar material, and under these boxes were placed the chicks. To the writer's knowledge these heatless hovers were in use in the mountains west of Mauch Chunk thirty years back. (His late youth was spent in that section, hence the evidence of personal knowledge.) The method of rearing with these hovers is to teach the youngsters how to find their heat haven, just as must be done in any case, heat or no heat, for a day or two, and to see that they are stowed away at night. Of course, the front of the hover is closed in with a piece of flat wood covering all of the opening except a half inch. Two hooks and eyes, one set at each end, will hold this door in place. The door is not opened until the dew is off or until the operator is satisfied conditions are right.

A small coop, larger than the hover but one way, in depth (front to rear), is used as housing. There should not be any space between the sides of the hover and house. A wire screen should be provided to cover the entire front of the house, to be used at night only. Wire runways are provided to keep the chicks from getting lost, strayed or stolen.

Pursuing the ordinary course, as with all chicks, they should be fed sand and water only the first day, some prepared chick food beginning the second day, and for at least three weeks thereafter it should have the preference over all old-style feeds, so-called johnnycake or what not.

A little beef meal is introduced into the prepared food on the tenth day, a teaspoon heaped full for twenty-five chicks. Chick grains and chick grit, oyster shell meal and a little sterilized bone meal (as made for chicks) should all become a part of the ration. Ten pounds of prepared chick feed, a half pound of oyster shell meal, the same quantity of bone meal and one-quarter pound of beef meal, with the possible addition of two ounces of pulverized charcoal, makes, for confined chicks, an excellent mash ration, which should be kept before them all of the twenty-one days.

Grain can be introduced after the fifth day. Chicks under the condition prescribed above need no attention other than grain feeding in the late afternoon, water, and shade in hot weather. At two months of age they can be turned out to range in certain bounds or transferred to a larger yard.

Raise the hover by placing one-inch strips under the ends as the youngsters outgrow it. Twenty-five chicks require a hover 18 inches deep, 24 inches long and 4 inches high to start. The cloth strips should reach to within one-half inch of the floor.

Hints to Save Baby Chicks

Many incubator chicks may be saved if the simple brooder hints suggested by Duncan Ried, of the Wisconsin College of Agriculture, are followed. Here are his suggestions:

(1.) Clean out and disinfect the brooder. Any of the coal tar preparations on the market make excellent disinfectants.

(2.) See to it that there are no corners in the brooder where the chicks might crowd in and perhaps be smothered. A round interior is best, and may be obtained by lining the brooder with heavy building paper.

(3.) Start the lamps at least twenty-four hours before putting the chicks in.

(4.) Handle little chicks carefully when putting in brooder. They may be put in as soon as they are dry and fluffy, which is usually when they are between twenty-four and thirty-six hours old.

(5.) Finely chopped up alfalfa or clover makes better bedding than sawdust or shavings. Little chicks like to pick and scratch.

(6.) Watch the chicks for any necessary regulation of temperature. If the chicks huddle around the lamp, increase the temperature, regardless of what the thermometer says. On the other hand, if the chicks run outside a good deal, turn down the lamp.

(7.) Feed the chicks five times a day. A small handful of any chick feed at each feeding, scattered on their backs, is sufficient for fifty chicks.

(8.) Buttermilk makes the best drink for little chicks. If buttermilk is not available, keep fresh water before them at all times.

(9.) Keep the brooder clean.

(10.) Get the chicks outdoors as soon as the ground becomes dry enough. Exercise prevents leg weakness, a disease caused by digestive troubles.

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The Road Past the Farm

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1291, MAY 15.—What are some of the money-saving things you have learned about the upkeep of your automobile? Maybe you get a little extra mileage from your tires, oil or gasoline, or make repairs and adjustments which your neighbor has to have done by garage mechanics. It will cost money to keep a car in commission this year, with everything high, so tell us in 300 words how we can save something.

TOPIC NO. 1292, JUNE 1.—What is the outlook for dairying in your locality? Are herds being increased or decreased? How is the milk sold, and what price does it bring on the farm? How does everything compare with conditions five years ago?

G. F. S., Georgetown, Del.—The writer has lived in several localities; has had fenced and open fields, road shade trees, etc.; experience with fences of pickets, boards, wire and stone; and studiously observed hedges of Osage orange, locust, willow, stumps and bramble "embroidery." He has endeavored to improve his own roadsides, even when a tenant. Slowly he is now tearing off the "edging" from a property recently acquired, leveling or grading to produce harmonious connections with the roadbed itself. He dislikes ditches; hence, where great depressions are required for drainage, slopes the edges so that all can be cultivated and the field entered readily from the road by buggy or machinery.

Large shade trees tend to keep the roads muddy in very wet weather, and on small farms, where one feels compelled to crop all the land, they may not be advisable. The writer, however, if having such trees, would not remove them; no, no! But along permanent pastures not only are they beautiful, but valuable as shade for stock. Cultivated or meadow land should be kept open. The writer prefers to have even fruit and nut trees in orchards by themselves rather than along the highway. Such make more or less litter, while the fruit is dusty, perhaps, at picking. Grapes especially have no place there.

Where road fencing is used, the "best kind" depends on conditions prevailing. Probably woven wire—strength depending on stock to be restrained—is usually most satisfactory, but when cost is a consideration, galvanized wire (the top strand smooth, some or all the lower barbed; size, height and spacing according to stock, etc.) the writer believes most practical. This is "clean"; other kinds impede more or less the cutting of grass and weeds. "Living fences" require not only pruning, but too much moisture and fertility to be economical.

J. W. R., Carbondale, W. Va.—As our farm is located some distance from the public road, we have not had much experience in road keeping. However, I have always been keenly interested in not only good roads, but beautiful roads. Of course, we take good care of our lane road that leads out to the main road. In planting the shade trees many years ago along this lane, we combined thrift and beauty by selecting black walnut. This tree is very hardy, grows rapidly, and in a few years comes into bearing. Those trees bring us in a substantial revenue by sale of the nuts, and our lane is considered the most beautiful in the neighborhood.

I have in mind one farmer in Boyd county who takes great pride in the road which runs along by his place. He has a row of maples extending the entire length of his farm and which greatly enhances the beauty of the fine road, which he helps to repair free of charge. He keeps the weeds cut, and the border of the road is a fine blue grass sod. His road fence is a marvel of beauty, and in front of the barn, which is situated close to the road, he has a huge blackboard, on which he chalks up the things he has for sale.

The farmer on the other side of the road caught the spirit, and he is vieing with this farmer in making the road a thing of beauty. Other farmers are also following the example of these two progressive farmers, and in a few years Boyd county will be known as the county of beautiful roads.

A farm that has a stretch of beautiful roadway is an honor to its owner, and is, moreover, a property eagerly sought after by farm purchasers.

C. C. C., Jr., Penn Laird, Va.—Since only a few hundred yards of our farm is traversed by a public road, keeping things spic and span along it is not a very difficult matter. However, we have discovered the appearance of this little stretch of road, be it ever so short, has everything to do with the opinion strangers and others form of us while passing by. The road, a beautiful macadam pike, stands out in sharp contrast to ugly briers, bushes, weeds and dilapidated fence along the wayside. The beauty of the road, like that of thousands of other roads, cannot be denied, so if there is anything unsightly along it the traveling public quickly notes it and proceeds to size up the farmer who will permit such conditions to exist. Realizing this, we strive to add to the appearance of this road by not only keeping the fence in good repair, but keeping down unsightly briers, bushes, weeds, etc. Each and every farmer is supposed to do this in this section, and as a rule the fences are kept scrupulously clean.

There is absolutely no question as to the beauty of road shade trees. In some sections of this country the roads are lined by beautiful shade trees that are admired by all who see them. Furthermore, they add wonderfully to the appearance of farm homes if nicely arranged along the road. Our road fence—Osage orange—while beautiful, particularly in summer, is not the ideal road fence. It requires a great deal of work to keep it nicely trimmed, and does not afford protection to stock, particularly pigs. My observation is that a neatly stretched wire fence on neatly erected posts of even height and size is the ideal road fence. Such a fence, if erected with care, and the roadside kept scrupulously clean, affords the farmer perfect protection, and at the same time adds wonderfully to the appearance of the farm.

Mrs. W. H. H., Needmore, Pa.—We have a public road, yet not a township road, running through our farm, also that of three of our neighbors, a distance of about two miles. Our land in this section is mostly slate, and a road of this kind requires a great deal of repairing in the spring of the year or after a hard rain. This work is usually done co-operatively, and no one is afraid to begin. He takes his team, plow, or whatever is needed, goes to the next neighbor, and both of them start work. Everyone works skilfully. One man probably has a few fields on his farm that have small stones on. He takes his wagon, gathers the stones, and hauls them on the road where they are most needed. When there is brush to be cut away, one does not wait on the other to do this, but, at his earliest convenience, cuts it himself. One man has set cherry trees, ever so many, along the road running through his farm.

As to fence, I would prefer a good, strong woven wire, as this kind is less dangerous in case of frightened horses, automobile collisions or similar occurrences, can be farmed close to on the inside, and easily kept clean on the road side.

When any odd-and-end jobs are necessary on our state road, such as removing a log brought in by high water, a tree blown across during a storm, a footbridge to be replaced, or ice to be taken out of the fordings, usually the one that first discovers it goes to work, and in a short time he has plenty of help. Such jobs as these are nearly always done by volunteers.

W. H. O. (?), Leaman Place, Pa.—The subject of roads is one that needs much discussion, because it is one of the most important factors in building a community. In our community some of the roads are piked. The dirt roads are scraped once each year, drained, rocks taken out, and given a general improving. When they become bad after a rain they are fixed with a drag, which is taken by one of the farmers, and the township pays him for his time.

The bushes are cut by the owner of the adjacent land. I believe there should be trees along the road if they are useful either for their wood or fruit. When the roads drift, they are opened by the farmers, who are paid by the township.

Although the law does not require a fence along the road, I believe there should be a good, strong one, either a wire or post fence, because of the people who are driving cattle.

B. B., Tully, N. Y.—In this county all bushes and noxious weeds along the roadside are supposed to be cut during the month of August by the owner of the property. If he fails to do so, the road commissioner may cut them and charge it up to the delinquent in his road taxes. The law, however, is not very strictly enforced. The serious shortage of help, with the farmer's desire to be patriotic and increase production, was too much of a strain to leave much time for roadsides.

The tendency here is to do away with road fences altogether. They are a nuisance in winter when the snow drifts and when the fields have to be resorted to for roads, and any kind of fence is more unsightly than an unobstructed field. It is easier to keep the roadsides clean without them, and they encourage the growth of bushes and weeds.

We lived two years on a farm where there was a row of sugar maples on each side of the road both ways past the buildings. Their beauty and shade held a romantic charm, and also held the mud in the road underneath them long after the more open road was dry. The trees were too close together. Every other one should have been cut out. If we were to set out any trees along the roadside near the buildings, we would use evergreens for a windbreak in winter. The wind moaning and sighing through the bare branches of the maples just mentioned is anything but romantic.

Mrs. E. M. A., Ashville, N. Y.—The present conditions of our public road is such that one would be perfectly safe in doing absolutely anything to it—any change whatsoever would *have* to be an improvement. In this state we have a strictly "money tax," so that it is not the business of anyone living on any road to do anything with or for the road unless he is hired to do so, except that all property owners are supposed to cut their own brush within the road limits. If this is not done within a certain time the road superintendent hires it done, and adds the cost to the tax on the adjacent land.

In this section shade trees are nice and desirable in hot, dry weather, but we don't get much such weather, and they are an unmitigated nuisance the rest of the year, which is probably why we don't have many trees.

There are very few road fences. Anything but wire would be impossible because of the deep snow, and barbed wire is prohibited by law; hence the road fence must be of smooth wire. I know a place where a man has about half a mile of rail fence beside the road, but that piece of road is utterly impassable all winter. The fence question, however, must depend largely upon climatic conditions. In snowless sections a rail or a board fence might be entirely satisfactory.

At this time of year our men do open the ditches to let the water run off, instead of allowing it to overflow the road and all the surrounding territory, but they are not supposed to do so. We have had almost an unprecedented fall of snow this year, the road has been plowed very little, and the result is an entirely impassable highway. We are a mile and a half from a good country store, and for some time people have been getting necessary supplies in quantities a man can carry on his back; no one tries to go with a horse.

W. G. Y., Taylorsville, N. C.—With the advent of the improved top-soiled road there has sprung up a new interest in the upkeep and appearance of the roads in our community. The roads are dragged regularly after each rain by a county road force, using army trucks and heavy steel drags, so there is little left for the land owner to do towards the road maintenance itself, but there are roadsides and fences, all belonging to the land owner, and there is where the newly awakened interest is being manifested.

Wtih a dry, firm road running through the farm now where once it was either dust or mud, the grown-up roadsides and dilapidated fences are sadly out of place. A friendly contest was started in our township last year to see what farm would show the greatest improvement in the condition and appearance of the roadsides and fences along its front during twelve months. The county road engineer, county agent and a third party selected acted as judges. Rail fences gave way to woven wire, bushes and briers were cut, the land broke and seeded down to grass, and cherry trees were planted by the hundred. It is the best-liked roadside tree in our community, producing a good shade, and in time a delightful bit of fruit, with the minimum of attention. The tree planting is confined largely to the north side, so as to give the road the full day's sun, which is essential in keeping it in condition, especially in the wet seasons. The old-time road-working days of tax-paying citizens, some with teams, and others with picks and shovels, are no more in our community, as the road tax is all paid now in money, and the roads made and kept in repair by the county road force, something after the way a railroad track is kept in order. The new system means good roads where before they were bad; it means easy grades where before they were terrific, and it is economy.

Mrs. C. S. F., Jeffersontown, Ky.—The road which runs through our farm is in very poor condition. We have contributed, free of charge, a hand and team and wagon for several days' work on it. We and several of our neighbors whose land also joins this road have set up a wail, petitioned, and made a big kick to the road commissioner. We have offered—and that without cost—land for a more suitable location of the road on another part of the farm. We are hopeful for better conditions, as we are promised an inspection of the road soon.

Owners of adjacent land are supposed to keep briers and bushes cut along the roadside in this locality. This we did last fall, and it certainly improved the appearance of the farm, as well as the road, as it surely had not been done for some time before we bought the place.

If trees are used for road shade, we favor the locust, as it is hardy, easily grown, matures quickly, and if necessary may later be used for posts. If good posts are used and properly set, and a good grade of woven wire selected and well stretched and stapled, a good, substantial fence may be had, either for the roadside or elsewhere, but personally we think the fence made of plank and painted or whitewashed is much prettier.

The Women's Exchange

This is the farm women's *own* department—for them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

MAY 15.—Memorial Day and its observance. Too often we see neglected cemeteries and lack of appreciation of this one day set aside for our departed. What about your local burying ground and community spirit of reverence? What are some good plants or vines to decorate the individual grave, and how do you favor treating it? Tell us your ideas on anything about the subject, but do not use more than 300 words in expressing them.

JUNE 1.—It is none too early to talk and plan about a Fourth of July celebration. Tell us about a successful family or community event which was a success in celebrating this eventful day. Don't forget the children's part, so tell us we can have more fun and fewer accidents.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Getting More Service From Old Clothes

Miss M. T. M., Mitchell, Va.—Since dress material has advanced so greatly in price, I resort to many measures to appear well dressed and not spend a great deal of money on new clothes. Quality comes first, so when purchasing a new suit or material for a dress I buy the best, and my clothes wear almost indefinitely. When I tire of a certain style of a suit or a one-piece dress, it can be dyed and made into a new style. On rainy days I find it a pleasant pastime to look over discarded clothes and convert them into useful wearing apparel.

When there are young folks in the family, almost all of the grown-up discarded clothes can be made into serviceable clothes for the children. Underwear is usually bought late in the season when it is reduced; then by carefully mending all breaks it will give service for two seasons. Men's discarded suits are often converted into useful wearing apparel for the little men. House dresses are often made into aprons and petticoats. The best pieces of old white waists can be used in making camisoles or as lining for serge dresses. When sheets are beginning to show signs of constant wear, these are made into tea towels, and they make excellent cloths to shine windows with, etc. Old sweaters can be made into warm caps and gloves for the school children. Old hose should be saved and used in remaking stockings for the little ones. Several sets of collar and cuffs were recently cut out of an old-fashioned pique skirt; then by using some imitation of Irish insertion a neat bureau scarf was fashioned out of the remainder. My experience has proven that it pays to store all discarded garments carefully until time can be found to make them into something useful and serviceable.

Mrs. G. S. D., Denton, Md.—In making over old clothing, be sure it has wear enough left in it to pay for the work of making. If you have faded or undesirable colors, dye the material with some sort of good dye, following directions closely. Soap dyes are nice for thin stuff that will not be washed or if you want to do the work over often, but for permanent colors use a boiled dye. You may dye almost any color over a very light goods, but only a darker shade over those already dark.

Sometimes you can buy new cloth cheap because it is faded in streaks, or an unsalable color, or white remnants. Last year we bought some brick-red linen ridiculously cheap. It was colored dark green, and when trimmed with a medium blue, made a very pretty summer suit.

In making over a soft, dark gray worsted dress, a light gray color and vest front was wanted. A small remnant of sheer white mercerized voile was dyed with gray soap dye, the edge of collar and top of vest front turned about one inch deep hem and coarse hemstitched with black silkateen, making a very pretty trimming.

Men's shirt bottoms that are still good will make women's or children's aprons. If you have several shirts alike you can use part of them to mend the rest. You can make sport shirts out of long-sleeved ones. Cut off and hem sleeves, cut off collar, and put on a new sport collar of a shade of material that combines well.

When my son wanted an athletic suit, and no jersey could be found, I bought a sport undershirt, and colored that and some strips of unbleached cloth to trim trunks, got a pattern, and made trunks of unbleached cotton cloth.

If you want to get ideas and make old dresses look new and stylish, study the mail order catalogs. If you can crochet or embroider, you can make many pretty trimmings for your new-old clothes. Collars and edgings are not very hard to make, but add an expensive look. Beading, so expensive to buy, is easily done at home. Simply transfer your pattern to the cloth, and sew the beads carefully on the lines. You could baste the paper on the cloth, then tear it away after sewing the beads on.

Mrs. C. F. G., West Valley, N. Y.—If you have clothing that is out of style, or outgrown garments, you can easily make school dresses and little boys' suits that will be suitable for school wear. Exercise care in ripping, cleaning and pressing your cloth; also steam all woolen goods and velvet. To do this I place a hot flatiron bottom side up, wet a towel, fold it up, and place it on the iron; then with your left hand draw the goods over the steaming towel, brushing them briskly with a whisk broom or clothes brush in your right hand. Always purchase a pattern, new trimmings and buttons.

Some years ago my husband had a fine tan colored fall overcoat of all wool cloth. It was lined with heavy silk. The sleeves were lined with striped satin. When it got out of style it was too good to wear around the farm, so I ripped it, steamed and pressed each piece, bought patterns and linings, and made our boy his first suit of clothes. No one knew but what I bought them, and they received many compliments. The silk lining made our daughter, who went to village school, a neat, serviceable dress. The plain silk was used for the skirt and overblouse, and the satin, arranged on a cambric lining, made the guimpe.

In ways like this I have saved many dollars, which were used to buy books, music and other things to make home pleasant.

Mrs. R. R., McDonough, N. Y.—I never throw away an old garment until I have considered its full value. I have made several beautiful wool suits for our three-year-old boy. I make them with long belted waists (a chance to piece under belt), adding breast pockets, and to one I added a soft silk collar. I have made suits out of old skirts, dresses, and old suits of his father's. I also made a coat, and now have a useless wool overcoat that is bright on wrong side to make over for next year.

I saw a little girl's school dress made out of sacks, colored dark blue and trimmed with bright plaid gingham. This gave me an idea, and I colored mine.

Children's shirts and drawers can quickly be made out of the best parts of cast-off grown-ups' clothing. If heavy garments, make flat seams and do not hem legs, use old cuffs, overcast or stitch. Then when new things are needed, buy a pattern and your cloth, and see how much better dressed your child will be than in ready-made garments. Always allow for shrinking and a child's growth. Better be a little loose first than too tight after the first or second washing.

I know of one family with two children where the mother does not pretend to sew—just buys ready-made. Her children seldom look warm or well clothed. Mine seldom have ready-made garments, and yet have as much to wear, at less expense.

After all, mothers need to sew, sew, sew, and most of us like to if we only had more time.

Mrs. J. U., Lafargeville, N. Y.—When I looked over my wardrobe for this season I found it so depleted that I had to make it over from the beginning. This is how I managed: Old union suits were cut under the arms and above the legs, turned bottom side up, a band put on, and a ruffle of silk or whatever I had completed my "knitted skirts." Some old-fashioned chemise were ripped, the yoke taken off, the fullness taken out, a lace yoke crocheted from thread (coarse white), and Princess slips, several in number, were the result.

A black serge dress of fifteen years ago, with full skirt,was found in the trunk, ripped, pressed, turned, and, with the aid of some jet trimming and black velvet for yoke and pockets, made my best dress. A dark gray worsted, thrown away as spotted and spoiled, was turned, and, with the aid of an old-style Eton jacket of the same material, a beautiful kimono was made, using the Eton jacket for the waist part, giving the short-waist, loose-back effect. A dark red velvet collar from a man's smoking-jacket, together with velvet cuffs and pockets and dark red buttons, and a pearl buckle on the big shawl collar, completed the work.

An old black silk waist and petticoat were transformed into a dandy bathing-suit in full style. The backs from two calico skirts and the fronts from the waists made two aprons after the regular nurses' pattern, which I always use, as follows: Two yards wide, meeting in the back, fastened by two buttons on the two-inch-wide band with hem at the bottom as near five inches as can be made; a bib which extends over the shoulder and fastens in the back. The apron is nearly as long as the dresses to be worn with it.

An old black serge coat (long) of fine quality was cut, turned, and made a splendid black skirt with pockets on each side. An old linen apron was cut into a short-sleeved, low-neck waist for hot weather.

To cap the climax, the dressmaker allowed me to sew on all my work, thus still further reducing my expenses. Now the secret is out on "How in the world did you manage to have so many new clothes this spring?"

Mrs. P. W. L., Tiadaghton, Pa.—Just last week I saw a dress made from a woman's long coat. The coat had been dyed, and was trimmed with beading on the front of the waist, the belt, cuffs and pocket flaps. The pockets in the coat made pockets in the skirt, and were concealed by the fancy flaps. A gown of equal material and make would cost from $25 to $30 if purchased. Of course, the style of the coat and ingenuity of the maker would have to decide the style of the gown.

The owner of the dress also wore a set of furs made from cat skins. She had sent the skins to experts for tanning and dyeing, and had made them herself, combining them with messaline. No one would ever have guessed they were home made or what they were made of.

Baby's first little shirts may be made from some of your own worn woolen undergarments, the only necessary expense being a spool of mercerized crochet cotton for finishing the neck and sleeves. One should cut with as few seams as possible, and the necessary seams should be finished flat and smooth.

There are several good patterns on the market for baby's shoes, and one can save several dollars by making them at home. They can be made of light woolen goods and lined, or of heavy cloth without lining. For best it is nice to work eyelets and lace with ribbon or cord, but for home wear it is better to fasten with a shoe button and buttonhole.

Mrs. J. R. D., New Enterprise, Pa.—I have four little girls, and for economical everyday dresses I buy shirting, which costs about the same as dress gingham and wears twice as long. If nice stripes in blue and brown are used it looks almost as nice as gingham.

Then, I use linings out of coats and trousers (the light ones can be colored), and many little things can be made for the little ones. Once I made a pair of panties for one of my girls out of black sateen coat lining, and once I made a middle from a trousers lining.

For white underskirts for my girls I took the skirts of their old embroidery dresses when the waists either got too small or were worn out. I put tops to these skirts, and when finished they will make very dainty petticoats.

I make all the dresses plain, with a few plaits or tucks and white collar. I do all my own sewing for a family of six, and make hubby's work shirts.

Mrs. S. S. F., Plymouth, N. H.—We busy farm women cannot afford to spend time making up cheap materials. Only the sturdy galatea romper cloths and ginghams, etc., should be used for children's wear or house dresses.

The home-made garments are cheapest if one has time and strength for sewing. The one-piece dress I find the most practical style. It is easily made, and as a child grows taller the hem may be lengthened, the loops the belt runs through ripped off and lowered with little trouble, and belt size adjusted much easier than if the skirt is sewed to the waist.

An outgrown blue-and-white gingham dress I made large enough for the little girl by ripping out the hem facing (it had been made longer once) and sewing plain blue chambray, nine inches wide, onto the bottom. This is turned up on the right side and neatly stitched, making a band about four inches wide around the bottom of skirt. Deep cuffs replaced two small worn ones, and the neck was made larger, and a new collar of the blue, also a belt, added. Three-quarters of a yard of chambray did it, and the garment will wear as long again. A little white galatea dress was enlarged in the same way, using white galatea dotted with blue for band, cuffs, etc.

A little coat was made from a man's navy blue serge coat, washed, pressed, and made by a plain pattern, the lengthwise seams in back covered by neatly pressed plaits. Patch pockets are put on over the old inserts, and collar, cuffs and pocket laps are of dark tan serge. It is lined with cotton tan-colored poplin.

Dye Old, Faded Dress Material

"Diamond Dyes" Make Shabby Apparel Stylish and New—So Easy Too.

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package.

To match any material, have dealer show you *"Diamond Dye"* Color Card.

A blue serge skirt for wear with middy blouse may be made first with a narrow belt to button on undergarment; later a wide belt or a yoke top may be added to give length. A serge skirt will bear repeated laundering if carefully pressed on the wrong side, and with an assortment of middy blouses, quite equips a girl for school wear.

I made a durable house dress from a long tan coat of linene by adding collar, cuffs, belt and pocket flaps of striped blue and tan material. The front facing was ripped out and used to face a deeper hem around bottom, and it is arranged to button straight down front. It never pays to make over old goods unless really strong and worth while.

M. G. F., Dryden, N. Y.—I find the use of modern dyes in pink and blue a great help in utilizing clothing that has good wear in it but has lost its looks, as well as being out of style. Most such garments are cut on such generous lines that extra material will come out of the old garment to be used as collars, cuffs, belts and pockets.

I prefer to rip the old garment to pieces pretty well, as the pieces take the dye more evenly than the whole garment. I always rip out the bottom hem in any case, as the garments usually need shortening. And if any stitching is removed after the dyeing process, a white line of undyed cloth shows.

I find that unbleached cotton cloth makes very artistic and excellent wearing aprons if cut in cover-all style, with half-inch bindings or facings of neck, armholes, belt and tops of pockets of striped percale, plaid gingham or a plain pink, blue, green or brown edge. These bindings may often be found in the piece bag.

The good parts of men's worn dress shirts make excellent children's clothing, rompers, guimpes, or a smock for a woman. An old natural-colored linen suit dyed an old blue made a very pretty modern dress, with some new plaid in a harmonizing color for trimming.

Dresses for Stout Women

Very few fashion designers make a study of the needs of the stout woman; therefore she must take the styles intended for the more slender woman, and, by process of elimination, work out her own design. Miss Charlotte E. Carpenter, of the Colorado Agricultural College, offers the following "don't's":

Don't select designs with kimono sleeves. They increase the width of the shoulder, and are less comfortable than the set-in sleeve.

Don't, if the arm is short and plump, select short or winged sleeves. Cuffs also should be avoided.

Don't have a round neck. The V-shaped neck is best. Square necks may be becoming if the bust is low.

Don't fasten the gown down the back.

Don't select the chemise type of dress. Loose lines are especially good, but some drapery, carefully placed, is needed to relieve the severity.

Don't wear sashes unless of the string variety.

Don't have the skirt very short. It should be at least ankle length.

Putting Away Winter Clothes

With the coming of the warm days of spring the housekeeper begins to plan for the care of the winter clothing. For most women this problem is made difficult, since adequate and properly constructed storage space is lacking. Cedar chests or chests of drawers lined with cedar are convenient, easily moved about, and may be purchased ready made. The odor of the cedar will keep the moths away from the garments, and they need no wrapping.

The winter clothing should be stored in a dry, cool place, if possible. As a further precaution, camphor gum, red or black pepper or cedar chips may be added to the package in which woolen goods are wrapped.

The following suggestions from the workers in textiles at the state college of agriculture at Ithaca, N. Y., for caring for woolen materials and furs may prove helpful:

First, mend all places needing repair.

Second, dust and air the garment thoroughly by hanging it out of doors in the bright sunlight and brushing it well.

Third, clean the garment carefully. Remove all soiled spots, or wash the article, if possible. Moths attack soiled spots more quickly than other parts.

The next step is to fold the article carefully, placing rolls of paper along the folds. This keeps the garment from creasing badly. The garment should next be wrapped carefully in newspapers and tied, and then rewrapped and tied a second time. Moths dislike the ink used in printing newspapers, and seldom attack garments carefully wrapped in this way. The package must be carefully laid away so that nothing will puncture the paper.

Moth-proof bags may be bought. One of these will hold several hangers on which articles may be hung. These bags are especially useful for dresses easily crushed and for furs. Folds and plaits in garments are often basted in place before storing.

Roses for Arbor Planting

Dorothy Perkins, a clear shell pink, is regarded by W. E. Bontrager, landscape gardener at the Ohio Experiment Station, as one of the best climbers to plant. The Excelsa, a good red, is rapidly displacing the crimson rambler.

Climbing American Beauty is also one of the choicest, bearing abundantly double deep pink roses of unusual charm.

Tausendschon is an almost thornless bush which bears enormous quantities of roses in several tints of pink, shading from light to dark.

Dr. Walter Van Fleet bears semi-double flesh pink roses on long, slender stems. A similar climbing rose in white is Mary Lovett.

A satisfactory yellow rambler is Gardenia, which produces freely after two or three years' growth.

Silver Moon is a pleasing semi-double pure white flower. American Pillar is regarded as one of the best single-flowering ramblers.

A richer effect will be secured when covering an arbor by planting a single variety than by grouping several colors; continuous planting of either Dorothy Perkins or Excelsa will give satisfactory results when spaced six to eight feet apart.

Try This Mint Vinegar

CLIFFORD E. DAVIS

Where lives the person with soul so dead that he don't like boiled cabbage, krout or greens? And then, to top it off, just pour on a bit of mint vinegar. Here's how to make it: Get some green peppermint leaves, bruise them with the rolling-pin or the hands a bit, fill a wide-mouthed bottle or jar, and pour on enough good vinegar to fill it. Acid vinegar won't do. Take pure cider vinegar. Cover it closely, and store it away for several months. Then try it on your cabbage, etc., and see if it isn't just the best ever.

Homespun Yarn from Ithaca

Take out insurance against grease spots on the new maple kitchen floor. Saturate it with hot linseed oil for several hours, and then wipe off all the extra oil. The wood will not absorb grease in the future.

It will help to maintain health if you ascertain what should be your proper weight and then hold to it.

Light woodwork and light-colored draperies give a room the appearance of being larger than it really is.

A bicycle pump can be used for getting rid of lint and dust on those parts of typewriters and sewing machines which are not easily reached with a brush.

Shoes will withstand the moisture of spring rains and thaws if they are coated with a warm mixture of equal parts of white pine tar, neatsfoot oil and beef tallow, melted together.

Never has it been so important that a woman should use careful judgment in buying clothing. Durability, suitability, becomingness of color and line are three things to consider.

The mystery of growing things comes home to one keenly in the spring. If you haven't a copy of "How the Plant Produces Seed," the state college of agriculture at Ithaca, N. Y., will send you one. Ask for F. 144.

Teeth Grow Dingy

Because You Leave a Film

All Statements Approved by High Dental Authorities

Teeth Are Ruined by It

This is why the daily brushing so often fails to save the teeth.

The cause of most tooth troubles is a slimy film. You can feel it with your tongue. It clings to teeth, enters crevices and stays. Ordinary brushing methods do not end it. So, month after month, the film remains and may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea—a common and serious trouble.

Now a Way to Combat It

These facts have been known for years, but dental science found no way to effectively combat film. Now that way is found. Able authorities have proved it by careful tests. Leading dentists all over America are urging its adoption. And millions of teeth are now cleaned daily as they never were before.

The method is embodied in a dentifrice called Pepsodent. And to spread the facts, a 10-Day Tube is being sent to everyone who asks.

Based on Active Pepsin

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to constantly combat it.

The way seems simple, but for long it seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. Now science has discovered a harmless activating method. And now active pepsin is embodied in an ideal tooth paste, modern in every way.

The results are quick and apparent. One sees at once that Pepsodent means whiter, safer teeth. Make this ten-day test in your own home, in justice to yourself.

PAT. OFF.
Pepsodent
REG. U.S.

The New-Day Dentifrice

A scientific film combatant now advised for daily use by leading dentists. Druggists everywhere are supplied with large tubes.

See What Ten Days Will Do

Send the coupon for a 10-Day Tube. Then note how clean the teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. Compare your teeth in ten days with your teeth today. Then decide for yourself what is best. Cut out the coupon now.

Ten-day Tube Free (260)

THE PEPSODENT COMPANY,
Dept. 428, 1104 S. Wabash Ave.,
Chicago, Illinois

Mail 10-Day Tube of Pepsodent to

Name.....

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ONLY ONE TUBE TO A FAMILY

SUNNY SLOPES

By Ethel Hueston

Copyright, 1917
The Bobbs-Merrill
Company

Author of Prudence of the Parsonage, etc.

CHAPTER XVII

RUBBING ELBOWS

"Chicago, Illinois.

"Dearly Beloveds:—

"Nearly I am converted to matrimony as a life career. Almost I feel it is worth the sacrifice of independence, the death of originality, the banishment of special friendship, and the monotonous bondage of rigid routine.

"I have just come back from Mount Mark, where I had my second visit with little Julia. She is worth the giving up of anything and the enduring of everything. She is marvelous.

"When I first saw her, just after Aunt Grace brought her home—I think I told you that I went without a new pair of lovely gray shoes at ten dollars a pair in order to go to Mount Mark to meet her—she was very sweet and all that, but when they are so rosily new they are more like scientific curiosities than literary inspirations. But I have met her again, and I am everlastingly converted to the domestic enslavement of women. One little Julia is worth it. So as soon as I find the husband, I am going to cultivate my eleven children. You remember that was the career I picked out in the days of my tender youth.

"Her face is big and round and white, and her eyes are bluer than any summer sky the poets could rave about. Her lips are the original cupid's bow—in fact, Julia's lips have about convinced me that cupid must have been a woman; certainly he could ask no more deadly weapon for shattering the hearts of men. Her hair is comical. It is yellow gold, but it sticks straight out in every direction. It is the most aggravatingly, irresistibly defiant hair you ever saw in your life. It makes you kiss it, and brush it, and soak it in water, and shake Julia for having it, and then fall in love with her all over again.

"She is just beginning to talk. When I arrived the whole family was assembled to do me honor—Prudence and Fairy, Lark and all the babies. Julia seemed to resent her temporary eclipse in the limelight. She crowed in a compelling way, and when I advanced to bow reverently before she, she pointed a fat, accusing finger at me, and said: 'Who is 'at?' Her very first word—and no presidential message ever provoked half the storm of approval her little phrase called forth. We laughed, and kissed each other, and begged her to say it again, and Prudence said, 'Oh, if Carol could have heard that!' and then we all rushed off and cried, and scolded each other for being so silly, and Julia screamed. Oh, it was a formal afternoon reception, all right.

"And I am putting a little three-line ad in the morning *Tribune*: 'Young, accomplished, attractive lady without means, of strong domestic tendencies, desires a husband, eugenic, rich, good looking. Object, matrimony.'

"Of course I know that I repeat myself. But if you don't say, 'Object, matrimony,' some men wouldn't catch the point.

"And so you are out of the 'san' and keeping house again. A brand new honeymoon, of course, and cooing doves, and chiming bells, and all the rest of it. When the rest of us back here write to each other, we say at the end: 'Carol is well, and David is better.' It conveys the idea of a Thanksgiving service and a hallelujah chorus. It means good-night, God bless you, and merry Christmas, all in one.

"By the way, do you remember William Canfield Brewer, the original advertiser, who got moved out when I moved in? Well, between you and me, almost for a while I did begin to see some charms in matrimony. He came again, and was properly introduced, and took me for a drive—it seems he had just collected his salary, and he came again, and we went to the park, and he came again. And that was when I began to see the halo around the wedding bells. One night he was telling me his experiences in saving money—uproariously funny, my dear, for he never could save more than five dollars a month, and ran in debt fifteen dollars to encompass it. He said:

"'My wife used to say it was harder work for me to carry my salary home from the office than to earn it right at the start.'

"I laughed—I thought, of course, it was a joke. I guess the laugh was revealing, for he turned around suddenly and said:

"'You knew I was married, didn't you, Connie?' First time he ever called me Connie.

"Well, the halo vanished like a flash, and hasn't got back yet.

"I said: 'No, I didn't know it.'

"'Why, everybody knows it," he expostulated.

"'I did not.'

"'We are devoted to each other,' he said, laughing lightly, 'but we find our devotion wears better at long distance. So she lives wherever I do not, and we get along like birdies in their little nest. I haven't seen her for two years.'

"Then he went on with his financial experiences, evidently calling the subject closed.

"When he started home, he said: 'Well, what shall we do Sunday?'

"'Nothing, together. You are married.'

"'Well, I don't get any fun out of it, do I?'

"'No, maybe not. But I have a hunch I won't get much fun out of it, either.'

"'I forgot about the parsonage.' He considered a moment. 'All right, I'll hunt her up and have her get a divorce,' he volunteered cheerfully.

"He was very puzzled and perplexed when I vetoed that. He says I can't have the true artistic temperament, I am so ghastly religious. At any rate, I have not seen him since, and have not answered his notes. Now, don't weep over me, Carol, and think my young affections were trifled with. They weren't—because they didn't have time. But I am not taking any chances.

"Henceforth I get my sentiment second hand.

"The girl at our table, Emily Jarvis, who is a spherist, attributes all the good fortune that has come to you and David to the fact that at heart you are in harmony with the spheres. You don't know what a spherist is, and neither do I. But it includes a lot of musical terms, and metaphors, and is something like Christian Science and New Thought, only more so. Spherists believe in a life of harmony, and somehow or other they get the spheres back of it, and believe in immaterial matter, and that all physical manifestations are negative, and the only positive, or affirmative, is 'harmony.'

"Emily is very, very pretty, and that sort of excuses her for digging into the intricacies of spheral harmonies. Even such unmitigated nonsense as sphere control, spirit harmony and mental submission assumes a semblance of dignity when expounded by her cherry red lips. She speaks vacuously of being under world dominance, and has absolutely no physical consciousness. She says so herself. If she ignores her tempting curves and matchless softness, she is the only one in the house who does. In fact, it is only the attraction of her very physical being, which she denies, that lends a species of sense to her harmonious converse. She and I are great friends. She says I am a harmonizer on the inside.

"She is engaged to a man across the hall, Rodney Carter. She has the room next to mine. His voice is deep and carrying, hers is clear and ringing, and the walls are thin. So I have benefited by most of their courtship. But the course of true love, you know! She has tried spiritually and harmoniously to convert him to immaterialism, but Rodney is very conscious of his physical, muscular, material being, and he hoots at her derisively, but tenderly.

"'Oh, cut it out, Emily,' he said, one evening. 'We can only afford one spirit in the family. One of us has got to earn a living. Spirits, it seems, require plenty of steak and potatoes to keep them in harmony. I could not conscientiously lead you to the altar, even a spheral altar, if I were not prepared to pay house rent and coal bills. One's enough; you can be our luxury.'

"'But, Rod, if you are in harmony you can earn our living so much more easily. You must get above this notion of material necessities. There are no such things.'

"'I don't believe it, he replied coldly. 'There are material necessities. You are one of them—the most necessary in the world. You may be harmonious, but you are material, too. That is why I love you. I couldn't be crazy about a melodious breath of air ghosting around the back yard. And I am not strong for disembodied minds, either. They make me nervous. They sound like skulls and cross-bones and whitening skeletons to me. I love you, your arms, your face, all of you. It may not be proper to talk about it, but I love it. Can you imagine our minds embracing each other, thrilling at the contact—oh, it's tommyrot. A fool——'

"'It may be tommyrot to you, Rod,' said Emily haughtily. 'But the inspiration of the matchless minds of the mystic men of the Orient——'

"'Inspiration of idiocy. What do mystic men of the Orient know about warm-blooded Americans, dead in love? I might kiss the air until I was blue in the face—nothing to it. But let me kiss you, and we are both aquiver, and——'

"'Rodney Carter, don't you dare say such things,' she cried furiously. 'It is insulting. Besides, it has nothing to do with it. It isn't so, anyhow. And what is more——'

"'There's nothing mysterious about us. Let the old Chinesers pad around in their bare feet and naked souls if they want to. We are children of light, we are, creatures of earth, earthly. We're——'

"'Oh, I can't argue with you, Rod,' she began confusedly.

"'I don't want you to. Kiss me. One kiss, Emily mine, will confound the whole united order of Maudlin Mystics. I am willing to risk all the anathemas contained in an inharmonious sphere for one touch of your lips. Go ahead with your sacred doctrine of universal and spiritual imbecility, but soften its harshness with woridly, physical, sin-suggesting kisses, and I am in tune with the infinite.'

"Then Emily broke the engagement, and Rodney, after relieving himself of more heretical opinions of spiritual simplicity and mystic madness, stalked unmelodiously away, slamming his door, and his own after it.

"What I didn't hear of it myself Emily told me afterward, for we are very confidential.

"The whole house was intensely interested in the denouement. Rodney sat stolidly at his table, crunching his food, gazing reproachfully and adoringly at Emily's proudly lifted head. Emily, for all her unconsciousness of physical necessity, lost her appetite, and grew pale. The mental and physical may have nothing in harmony, as she says, but certainly her mental uprheaval, resulting from the lack of Rodney's demonstrations of love, affected her physical appetite, as well as her complexion.

"When Rodney met Emily in the halls, he made her life miserable.

"'Good morning, Long Sin Coo.' 'Hello, Ghostie.' 'Hey, Spirit, may I borrow a nip of brandy to make an ethereal cocktail for my imaginary nightcap?

"And he opened his transom and took to talking to himself out loud. So Emily decided to close her transom. It stuck. She asked my assistance, and we balanced a chair on a box, and I held it steady while she got up to oil the transom. But first she would lose her balance, then she would drop the oil can, then the box would slip. She couldn't reach the joints, or whatever you call them, and when she stood on tiptoe she lost her balance. Then she got her finger in the joint and pinched it, emitting a most material squeal as she did so. Happening to glance through the transom, she saw Rodney standing below in the hall, grinning at her with inharmonious, unspiritual, unsentimental glee, and she tugged viciously at the transom, banging herself off the box, upsetting the chair, and squirting oil all over me as she fell.

"Rodney rushed to the rescue, but Emily was already scrambling into sitting posture, scared, bruised and furious. She had torn her dress, twisted her ankle, bumped her head and scratched her face. And Rodney had seen it.

"Ignoring me, Rodney sat down on the box and looked her over with cold, professional eyes.

"'My little seeker after truth,' he said, 'you are a mystic combination of spirit and mind. You are in tune with the infinite spheres. You are a breath in a universal breeze. Therefore you feel no inconvenience. Get up, my child, and waltz an Oriental hesitation down the hall, and convince yourself everlastingly that you are in truth only a mysterious unit in a universe of harmonic chords.'

"Emily dropped her head on the oil can, lifted up her voice and wept. And Rodney, with an exclamation that a minister's daughter can not repeat, took the unhappy mystic into his arms.

"'Sweetheart, forgive me. I am a brute, I know. Knock me on the head with the oil can, won't you? Don't cry, sweetheart—Emily, don't.'

"Finally Emily spoke. 'You are as mean and hateful as you can be, Rodney Carter,' she said, burrowing more deeply into his shoulder. 'And I despise you. And I am going to marry you, too, just to get even with you. Give me back my engagement ring.' Rodney ecstatically did. The touch of her lovely, material body must have thrilled him, for he kissed her all over the top of the head, her face being hidden:

"'I stood my ground. I was looking for literary material, since I never have a chance to make romance for myself. Emily spoke again:

"'I know now that the Vast Infinite intends us for each other. I have been dwelling in Perfect Harmony the last four days, trusting the All Perfection to bring us together again. So I know that our union was decreed from the foundation by the Universal sphere. I tell you, Rod, you can't get ahead of the Infinite.'

"'Then I went to my own room, and they never knew when I left. They didn't even remember I had been there. But as I came back from answering the phone at 11 o'clock, I met Rod in the hall. He had some books in his hand. He ducked them behind him when he saw me. I reached for them sternly, and he pulled them out rather sheepishly. I read the titles, 'Spheral Mentality,' 'Infinite Spheres,' 'Spheral Harmony.'

"'Made me promise to read 'em, too,' he confided in a whisper. 'And, by George, she is worth it.'

"Oh, I tell you, Carol, these boarding houses are chuck full of literary material. Really, I am developing. I know it. I feel it every day. I rub elbows with everyone I meet, and I like it. I don't care if they aren't 'my kind' at all. I am learning to reach down to the same old human nature back of all the different kinds. Isn't that growth?

"You asked about the millionaire's son. He still comes to see me every once in a while. He says he can't promise to let me spend all of his millions for missions if I marry him—says he has too much fun spending them on himself—but he insists that I may do whatever I like with him. Isn't it too bad I can't feel called upon to take him in hand?

"Anyhow, if I had a million dollars, do you know what I would do? Buy an orphans' home, and dump 'em all in a big ship and go sailing, sailing, over the bounding main. I'd kidnap Julia and take her along.

"He was here last week, and sent his love to you, and best wishes to David. He told me to ask particularly how your complexion gets along out in the sunny mesa land.

"I want to see you. I am saving up my pennies religiously, and when they have multiplied sufficiently I am coming. Thanks for the invitation.

"Lovingly as always,

"CONNIE."

CHAPTER XVIII

QUIESCENT

Long but not dreary weeks followed one after the other. In the little 'dobe cottage, situated far up the hill on the mesa, Carol and David lived a life of passionless routine. Carol was busy; hence she had the easier part. David's breakfast on a tray at 7, nourishment at 9, luncheon at 12, nourishment at 3, diner at 6, nourishment at 9, with medicines to be administered, temperatures to be taken, alcohol rubs to be given at frequent intervals—this was Carol's day. And at odd hours the house must be kept clean and sanitary, dishes washed, letters written. And whenever the moment came, David was waiting for her to come and read aloud to him.

When a man of action, of energy, of boundless enthusiasm is tossed aside, strapped with iron bands to a little white cot on a screened porch, with a view of a sunburned mesa reaching off to the mountains, unless he is of the biggest and finest, his personality can not survive. David's did. Months of helplessness lay behind him; a life of inaction lay before him. He could walk a half block or so, he could go driving with kind neighbors who invited him, but every avenue of service was closed, every form of expression denied him. He had hoped to live a full, good, glowing life. And there he lay.

It is not work which tells the caliber of man, but idleness.

Month followed month. Now there were bitter winds and blinding snows, now the hot sun scorched the yellow sand of the mesa, now the mountains were high white clouds of snow, now the fields of green alfalfa showed on a few distant foothills, and the canyons were green with pines; otherwise there was no change.

But the summers in New Mexico were crushingly, killingly hot, and so the sturdy-hearted health chasers left the 'dobe cottage, packed their few possessions, and moved up into Colorado. And while David waited patiently in the hotel, Carol set forth alone and found a small cottage with sleeping-porch, cleanly and nicely furnished, rent reasonable, no objections to health seekers. And she and David moved into their new home.

And the old life of Albuquerque began again, meals, nourishments and medicines alternating through the days.

In the summer of the third year, Carol wrote to Connie:

"Haven't you been saving up long enough? We do so want to see you, and Colorado is beautiful. We haven't the long mesa stretching up to the sunny slopes as it was in New Mexico, but from our tiny cottage we can look right over the city to the mountains on the other side, and the sunny slopes are there. So please count your pennies. They give summer rates, you know."

Connie went down to Mount Mark the night she received that letter, spending half the night in the train, and talked it over with the family. Without a dissenting voice, they said she ought to go. Ten days later, Carol and David were exulting over Connie's letter:

"Yes, thank you, I am coming. In fact, I was only waiting for the word from you. So I shall start on Monday next, C., B. & Q., reaching Denver Tuesday afternoon at 2.30. Be sure and meet me.

"I nearly lost my job, too. I went to Mr. Carver and said I wanted a vacation. He said: 'All right; when and how long?' I said: 'Beginning next Monday.' He nodded. 'To continue six weeks.' He nearly died. He asked what kind of an institution for the feeble-minded I thought this was. I said I hadn't solved it yet. He reminded me that I have already had one week's vacation, and three days on two different occasions. He said he hired people to work, not to visit their relatives at his expense. He said I had one week of vacation coming. And I interrupted to say I didn't expect any salary during that time, I just wanted him to hold my position for me. He said he was astonished I didn't ask him to discontinue publication during my absence. Finally he said I might have one week on full pay, and one week without pay, and that was enough for a senator.

"So I went to my machine and wrote out a very literary resignation, which I handed to him. I know the business now, and I have met a lot of publishers, so I was safe in resigning. I knew I could get another position in three days. He tore the resignation up, and said he wished I could outgrow my childishness.

"Before luncheon he said he had a good idea. We were away behind in clippings for filling, and he suggested that I take a big bundle of exchanges with me, and clip while I vacated. Also I could doubtless find the time to write a thousand or so words a week and send it in, and then I might go on full pay for six weeks. Figuratively I fell upon his neck and kissed him—purely figuratively, for his wife has a most annoying way of dropping in at unexpected hours—and I am getting the most charming new clothes made up, so David will think I am prettier than you. Now don't withdraw the invitation, for I shall come anyhow."

Carol considered herself well schooled in the art of emotional restraint, but when she finished reading those blessed words—which to her ears, so hungry for the voices of home, sounded like an extract from the beatitudes—she put her head on the back of David's hand, and gulped audibly. And she admitted that she must certainly have cried, save for the restraining influence of the knowledge that crying made her nose red.

In the meantime, back in Iowa, the Starrs in their separate households were running riot. Never was there to be such a wonderful visit for anybody in the world. Jerry and Prudence bundled up their family, and got into a Harmer Six and drove down to Mount Mark, where they ensconced themselves in the family home and announced their intention of staying until Connie had gone. As soon as Fairy heard that, she hastened home too, full of the glad tiding that she had found a boy she wanted to adopt at last. Lark and Jim neglected the farm shamefully, and all the women of the neighborhood were busy making endless little odds and ends of dainty clothing for Carol, who had lived ready-made during the three years of their domicile in the shadowland of sunshine.

A hurried letter was despatched to David's doctor, asking endless questions, pledging him to secrecy, and urging him to wire an answer C. O. D. Little Julia was instructed as to her mother's charms and her father's virtues far beyond the point of her com-

(Continued on page 156)

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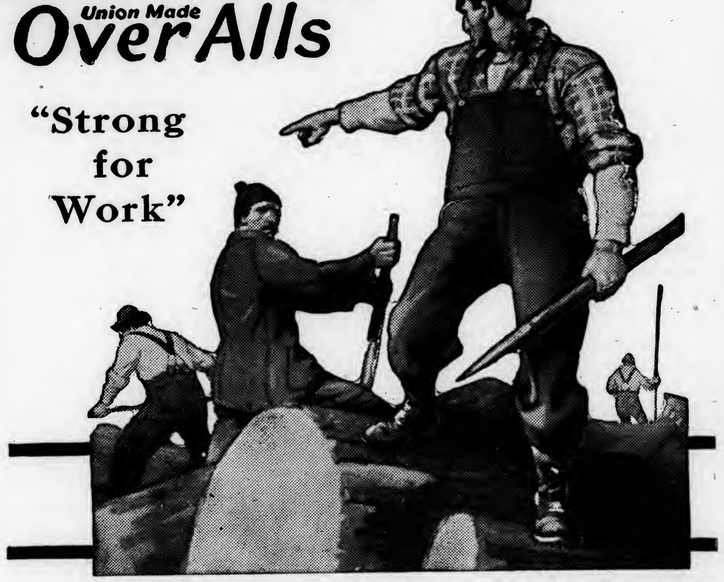

WHEN you want best-value from every standpoint in overalls and work coats—*service and comfort*—buy Blue Buckles!

From the comfortable, stay-up suspenders down to the sturdily stitched trouser cuffs, *Blue Buckles are supreme value.* Their oversize guarantees more wear and greater comfort. Their Union workmanship guarantees fewer rips and tears.

One wear-test of Blue Buckles will prove out the strongest statement we could make.

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JOBBERS OVERALL COMPANY, Lynchburg, Va.

Farm Happenings

AS TOLD BY THE BOSS

We have started to shear the sheep, and find that they have a well-grown fleece and wool of good quality. It pays to keep the flock in good condition during the winter in order to clip the best weight and quality of wool.

It will pay to remove the tags from the fleece and sell them separate. There is a slight loss in weight when this is done, but it certainly improves the appearance of the fleece when tied up.

We have set aside sufficient land to grow plenty of forage for the lambs that are to be developed as breeders. This will be necessary in order to get the maximum growth on them.

The beef breeding cows have wintered well on a ration consisting of about 30 pounds of silage, 1 pound of cottonseed meal and as much oat straw as they will clean up daily. This is not an expensive ration, and keeps the cows in good condition.

One of the brood sows had only two pigs last fall. Since she was a young sow, we decided to keep her and give her another chance. This spring she duplicated the size of the litter, and is now in the fattening pen and getting ready for the butcher.

The cattle and sheep should not be turned out on pasture too early in the spring. It will pay to give the grass a good start. It will improve the quality of the pasture, and the live stock will do better when the grass is not so watery.

A considerable number of the early grade lambs have been marketed as "hothouse" lambs. These weighed from 35 to 50 pounds when shipped, and sold at from eleven to fourteen dollars per head.

The demand for good ram lambs has never been as brisk as this year. We have picked out a number of the best early lambs, and will push them in order to have them ready for the fall trade.

Record Prices for Draft Horses

The highest prices ever paid for draft horses bought in the open market at Chicago were reached the latter part of March. Messrs. Richards and Slipp, of Fort Fairfield, Me., spent two weeks at the Union Stock Yards purchasing a consignment for shipment to the potato fields of Maine. Their selections were deep-bodied, powerfully built drafters, averaging over 1800 pounds each in weight and costing more than $450 each, f. o. b. Chicago. One pair sold for considerably over $1000. Good judges consider this to be the best carload of draft horses ever bought on the Chicago market.

The United States census for 1910 revealed 19,833,000 horses and 4,210,000 mules on farms, and the Department of Agriculture estimates for January 1, 1920, show 21,109,000 horses and 4,995,000 mules on farms, or an increase of 1,276,000 horses and 785,000 mules in the last decade. Besides this, we exported during the nine years ending June 30, 1919, 1,149,763 horses and 376,836 mules.

The rise in prices for good draft horses and mules, in spite of the existence of more than 21,000,000 horses and almost 5,000,000 mules on farms, indicates how agricultural and transportation needs are growing. Good authorities predict a steady rise in prices of horses and mules for the next three years.—Wayne Dinsmore, secretary Horse Association of America.

"What Are We Food Producers Going To Do About It?"

A Problem for the Dairyman

IN an article recently published in "The Milk Magazine", Professor Washburn of the University of Minnesota, after discussing the food value of skimmed milk and the large amount of this good human food that fails to reach humanity directly, says:

"What are we food producers going to do about it? Continue to waste or invent some better way of using the skimmed milk? Some of it is being well-used on farm-tables, though not by any means as much as should be; some amounts may be used as artificial buttermilk and as cottage cheese, but after all this is done, there still will remain great amounts of the most delicate and useful food with but a poor outlet."

What This Means To You

THIS pertinent question, asked by a Dairy Expert, through the medium of a Dairy publication, shows that thinking dairymen are beginning to recognize the serious situation—that over one-third of their total output of human food substance is not being utilized as such, and therefore is failing to that extent in benefiting humanity and profiting the dairyman.

Professor Washburn in his article calls skimmed milk "liquid lean meat" because of its likeness to meat in its food value. He then shows that when skimmed milk is fed to stock, only 15 to 20 percent of its food value is returned to humanity in the meat of the animal.

In other words, the dairyman who feeds skimmed milk to stock spends 100% of human food to get back 15 to 20 percent of human food.

Is this good business?

To state it in terms of money—should you spend $100 to get back $15 or $20?

There is but one answer to this question. That is, skimmed milk should be used directly as human food, and a market value established for it as such, if the dairyman is to realize the greatest profit and humanity the greatest benefit from this valuable food.

Skimmed Milk as Human Food

TO do that, a market for skimmed milk as a direct human food must be created. But skimmed milk in its natural state is not a palatable food because of its lack of fat content.

To make it desirable for human use, then, a fat must be restored to it. Obviously butter fat cannot be used. Why not then use a wholesome vegetable fat?

"But that would not restore it to the equal of whole milk in food value", you say. No it would not—but it is not desired to create an article that will compete in the market with who milk as a direct food.

That brings us, then, to the question of use.

Skimmed milk, with a vegetable fat added, is particularly useful for culinary purposes in the home.

And there you have it. Skimmed milk with a small amount of vegetable fat added would *serve as an auxiliary to the family milk supply for cooking and baking,* and establish a new market for skimmed milk as a human food.

The new food product Hebe, which is composed of evaporated skimmed milk and cocoanut fat, scientifically combined, does just that.

Hebe Points the Way

TO make 100 pounds of Hebe it takes 210 pounds of skimmed milk and 7.8 pounds of cocoanut fat. Thus a small amount of vegetable fat serves as the agent for making a large amount of skimmed milk more desirable and therefore more readily salable as a human food product for cooking purposes.

Hebe thus points the way to utilize as human food the skimmed milk that is now being less profitably used, and it does this without interfering with the established markets for dairy products.

Hebe, then, is an ally to the dairy industry—opening a new and more profitable market to the dairyman for his by-product, skimmed milk—and co-operating in the effort for the increased use of dairy products in the home.

Indirectly, every dairyman profits by that which benefits the industry as a whole. As Hebe volume increases, there naturally will follow the extension of direct benefits.

You will be interested in reading our booklet, "The Missing Third." Ask us to send you a copy. There is no charge for this. Address 2459 Consumers Building, Chicago. The Hebe Company, Chicago and Seattle.

News from the Breed Associations

Milking Shorthorn Congress

W. H. TOMHAVE

The third national congress show and sale of milking Shorthorn cattle was held at Erie, Pa., March 30th and 31st. About sixty head of breeding cattle, mostly cows and heifers, were sold at an average of $378 per head. This average is not as high as last year, but the quality of the cattle offered did not come up to the standard established in 1919. A comparatively large number of the cattle were young heifers, which reduced the general average of sale.

The top of the sale was made on Roan Clay, a two-hear-old heifer consigned by John Lafter, Middlesex, N. Y., and sold to Mr. Bull, of Washingtonville, N. Y., for $1125. The top price bull was Glenside Red Chief, consigned by L. D. May, of Granville Center, Pa., and sold to R. H. Morris, Bason, N. Y., at $1000.

Most of the cattle in the sale were purchased by breeders from the eastern states, with a few head going to Iowa and Minnesota.

At the business meeting of the Milking Shorthorn Cattle Club of America, held on Tuesday evening, it was decided to merge with the Milking Shorthorn Society of America, which at the present time is a separate organization. The new organization will be known as the Milking Shorthorn Society, and will be the only organization to further the interest of milking Shorthorn cattle. Ray H. Cook, of Independence, Iowa, was elected secretary of the new organization.

"She's a grand wee coo," and all dairymen, irrespective of breed, will pay their homage to Lenetta, the 21-year-old Ayrshire who recently completed an advanced registry record amounting to 11,138 pounds milk, 374.73 pounds fat, a record no cow of any breed has ever equalled officially at the age of twenty-one years. Lenetta illustrates Ayrshire persistency and the breed's ability to produce and reproduce. She was born August 16, 1898, and was bred by A. A. Hunnewell, of New Gloucester, Me., and is owned and was tested by Dr. John A. Ness, of Auburn, Me. Cows of her type are the backbone of the dairy industry.

Imp. Blossom Blue Bell of Mara Alva 74135, a Guernsey owned by S. N. Root, Landisville, Pa., has recently completed an official record of 11,247.5 pounds of milk and 549.91 pounds of butterfat, begun at the age of 2½ years. She carried a calf 270 days of her testing period. She was imported by Mara Alva Farm, Smithville, Ohio, and was purchased by Mr. Root, with eighteen other heifers, when she was about eight months of age. On December 15, 1918, she dropped a beautiful heifer calf, and was placed on test in January, 1919. On October 21, 1919, she again dropped a fine heifer calf. She was milked twice a day during the first nine months of her test, but after the second calf was dropped it became necessary to increase the number of milkings to three a day. In January, 1920, she produced 65 pounds of butterfat.

In announcing the death of Dolly Copeland 42389, at the age of 20 years lacking a few days, the American Aberdeen-Angus Breeders' Association calls attention to the records of the breed in general for longevity and prolificacy. Dolly Copeland, dam of Glenfoil Thick Set 2d, four times an International champion bull, a champion cow and at least one champion steer, died as the result of an accident on the farm of Mike Donohoe, in Iowa, in December, when she slipped on the ice and broke her hip. She is the dam of at least eighteen calves, possibly nineteen, never having missed a year without turning in a calf, and a good one at that, to pay for her board. The records of the association show ten calves recorded, but many of the bulls were castrated and shown as steers, especially in the hard times. Old Grannie, the first cow in the herd book, lived to be nearly 36, and dropped twenty-five calves in Scotland, but she had every care and attention in order to see how long she would live.

September 27th to October 3d have been selected as the dates of the second annual International Belgian Horse Show, to be held at Waterloo, Iowa. Belgian breeders are enthusiastic in their support of this show, and declare that they will make it bigger and better than the first show, which went down in history as the greatest single-breed horse show ever held in America.

That the successful breeding of one breed of live stock in a community is a valuable asset to that community has been proved by the development of the Holstein-Friesian cattle in Geauga county, Ohio, and of the Jersey cattle through the Barnesville Cow Testing Association in Belmont county. Numerous examples of community breeding show that it is an excellent means of bringing local fame to any section of the country.

Outlook for Milk

The milk situation in the Philadelphia district is not as serious as in some other sections at the present time. This section is not a condensing section like some of our adjoining territories, as only a small percentage of our milk is condensed. The liquid milk market is very good as to demand at the present time, because the price to the consumer has been kept low all winter, and advertising the value of milk to the consumer has helped our liquid milk market a great deal. The general trend of people toward the city is constantly kept up, making the population in the cities and small towns in our section way above the rural population, and leaves fewer to raise the food. The farmer, therefore, is either selling his herd or keeping less cows, on account of being unable to get help to do the work. Also, the long and hard winter has helped to keep production of milk below last year. This also is partly due to the very high price of feed at this time. The condense market is practically at a standstill, as very little is being shipped abroad.—H. D. Allebach, vice-president Interstate Milk Producers' Association.

Suggests Simple Remedy to Rid Hogs of Worms

Worms are responsible for many unthrifty herds of hogs, and often aid serious swine diseases to gain a foothold, says G. Bohstedt, of the animal husbandry department of the Wisconsin College of Agriculture.

"To prevent worms, feed the pigs well," he urges, "especially young pigs. Do not throw the feed in the mud. Keep the lots and pens clean and free from old rubbish or filthy wallows."

A formula used successfully in the Wisconsin Experiment Station herd as a worm expeller includes: Santonin, 2½ grains; calomel, 2½ grains; areca nut, 1 dram; sodium bicarbonate, ½ dram. This is a dose for a 50-pound pig, and may be used in proportionate amounts for a larger or smaller pig. The santonin and calomel are the two most important parts of the formula, and should be used if either of the last two be not readily available.

"Withhold feed eighteen hours previous to treating pigs," advises Mr. Bohstedt. "Give the medicine in a thin slop, if pigs are accustomed to slop; otherwise by the drench method. See that each pig gets its share. Repeat after a week or ten days.

"A good method is to have your druggist make up ten times a formula for a package so as to enable one to treat lots of ten pigs each."

The Draft Horse Coming Back

It is a great relief to horsemen everywhere to know that there is no longer any doubt about the draft horse coming back. There is not a single indication anywhere to lead farmers to think that maybe they ought not to breed their good mares this spring. Percheron breeders now have the satisfaction of being able to say that they can get more money for a high-class mare than they have ever been able to get before. Farmers are saying also that they can get more dollars for a good grade draft mare or gelding than was ever possible within their recollection.

Eighteen farmers in Union township, Berks county, Pennsylvania, have purchased pure-bred Berkshires during the past month, and are organizing a community club.

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34x4	9.35	2.60
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Sunny Slopes

(Continued from page 153)

prehension. And Jerry spent long hours with Connie in the car, explaining its mechanism, and making her a really proficient driver, although she had been very skilful behind the wheel before. Also, he wrote long letters to his dealer in Denver, giving him such a host of minute instructions that the bewildered agent thought the "old gent in Des Moines had gone daft."

Carol wrote every day, pitifully, jubilantly, begging Connie to hurry and get started, admonishing her to take a complete line of snapshots of every Starr, to count each additional gray hair in darling father's head, and to locate every separate dimple in Julia's fat little body. And every letter was answered by every one of the family, who interrupted themselves to urge everybody else not to give anything away and to be careful what they said. And they all cried over Julia, and over Carol's letters, and even cried over the beautiful assortment of clothes they had accumulated for Carol, using Lark as a sewing model.

Twenty minutes after the train left Mount Mark came a telegram from Carol: "Did she get off all right? Did anything happen? Wire immediately." And the whole family rushed off to separate rooms to weep all over again.

But Aunt Grace walked slowly about the house, gathering up blocks, and headless dolls, and tailless dogs and laying them carefully away in a drawer until little Julia should return to visit the family in Mount Mark.

For the doctor had said it was all right to restore the baby to her heart-hungering parents in the mountain land. Carol was fairly strong; David was fairly well. The baby being healthy, and the parents being sanitary, the danger to its tiny lungs was minimized—and by all means send them the baby.

So Julia was arrayed in matchless garments destined to charm the eyes of the parents, who, in their happiness, would never realize it had any clothes on at all, and Connie set out upon her journey with the little girl in her charge.

On Tuesday morning Carol was a mental wreck. She forgot to salt David's eggs, and gave him codeine for his cough instead of tonic tablets for his appetite. She put no soda in the hot cakes, and made his eggnog of buttermilk. She laughed out loud when David was asking the blessing, and when he wondered how tall Julia was she burst out crying, and then broke two glasses in her energetic haste to cover up the emotional outbreak. Altogether it was a most trying morning. She was ready to meet the train exactly two hours and a half before it was due, and she combed David's hair three times, and whenever he couldn't sit still another minute she got up and dusted the railing round the porch, brushed off his lounging-jacket and rearranged the roses in the vase on his table.

"David, I honestly believe I was homesick. I didn't know it before. I got along all right before I knew she was coming, but now I want to jump up and down and shout. Why on earth didn't she take an earlier train and save me this agony?"

At last, in self-defense, David insisted that she should start, and, too impatient to wait for cars and to endure their stopping at every corner, she walked the two miles to the station, arriving breathless, perspiring and flushed. Even then she was thirty minutes ahead of time, but finally the announcer called the train, and Carol stationed herself at the exit close to the gate to watch the long line of travelers coming up from the subway. No one noticed the slender woman standing so motionless in the front of the waiting line, but the angels in Heaven must have marked the tumult throbbing in her heart and the happiness stinging in her bright eyes.

Then—she leaned forward. That was Connie, of course—she caught her breath; and tears started to her eyes. Yes, that was Connie, that tall, slim girl with the shining face—and oh, kind and merciful Providence, that must be her own little Julia trudging along beside her, the fat white face turning eagerly from side to side, confident she was going to know that mother on sight, just because they had told her a mother was what most belonged to her.

(To be continued)

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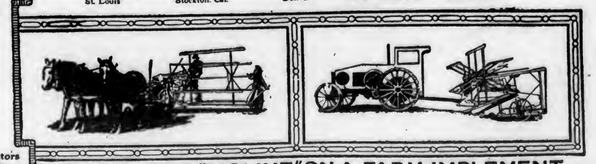

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The Practical Farmer

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Working Out a Plan for Constructive Farming

By FRANKLIN MENGES

SOILS can be handled in such a way that the fertility contained in manure, the sods and leguminous catch crops plowed under will be made available, as well as some of the latent unavailable mineral fertility contained in the soil, and large crop yields made a normal certainty. This has been demonstrated throughout a considerable section of country within recent years, under the supervision of the author, on a number of farms with different types of soils and various methods of cropping. In order to accomplish this there must at all times be present in the soil a sufficient amount of crop residue derived from manure, sods and leguminous catch crops to furnish all the nitrogen that will be needed.

When this has been converted into nitrous and nitric acids by bacterial action it will combine with the potash, the lime, the magnesia, the phosphate, etc., contained in the crop residue, and make all these elements, as well as the nitrogen itself, available. And, furthermore, sufficient nitrogen, when converted into nitric acid, must be in the soil to make available enough of the latent potash, lime, phosphoric acid and other mineral elements, over and above those contained in the plant residue, to compensate for losses by leaching and fertility for crops which require larger quantities than is contained in the crop residue.

In order to do this, a rotation of crops must be arranged, into which leguminous catch crops can be introduced. In this way the leguminous crops will be the agencies to get the nitrogen required for this purpose out of the air and incorporate it into their bodies. Thus an acid containing an element of fertility is manufactured in the soil through agencies provided by nature, which, when the soil is provided with lime and phosphorus, will make available the fertility contained in the plant residue as well as the latent fertility. Truly, a fertilizer factory in the soil!

In order to demonstrate in a practical way that the fertility contained in organic matter or plant residue, when incorporated with the soil and when the soil contains a fair supply of lime and phosphoric acid, can be so handled that it will be made available and produce large crop yields, an operation which was observed within the past few years in Somerset county, Pennsylvania, is cited. This was a sod field containing twelve acres, which had been limed the previous year and which received an application of barnyard manure of six tons to the acre during the winter before these observations were made. A heavy crop of timothy and red clover had grown up during the spring and summer, and it was pastured by a herd of eight cattle during a period of three weeks. The field was plowed the middle of July, and afterwards disk harrowed twice and spring-tooth harrowed at least once and sometimes twice a week until it was seeded with wheat the first week in September. The seed germinated well, made a vigorous plant in the fall, and went through the winter in good shape. It resumed its growth in the spring with the same vigor, and maintained it until it ripened. When harvested and threshed it yielded a little over 45 bushels of clean wheat to the acre and 2½ tons of straw. Before this field was plowed the clover and timothy sod was examined, and after a careful estimate of the quantities of both these crops contained on an average per acre had been made, it was found that three tons of dry matter, roots and tops, composed of equal quantities of timothy and clover, was plowed under.

The organic residue of a ton and a half of dry matter derived from timothy contains 36 pounds of nitrogen, 5 pounds of phosphorus, 36 pounds of potash and 10 pounds of lime, while a ton and a half of dry matter derived from red clover roots and tops contains 60 pounds of nitrogen, 8 pounds of phosphorus, 45 pounds of potash and 22 pounds of lime, making a total of 96 pounds of nitrogen, 13 pounds of phosphorus, 81 pounds of potash and 32 pounds of lime per acre. A yield of 45 bushels of wheat and 2½ tons of straw per acre requires 88 pounds of nitrogen, 14 pounds of phosphorus, 56 pounds of potassium and 10 pounds of lime per acre. From this it is evident that the crop residue contained more fertility than the crop which followed it demanded to produce the large yield of 45 bushels of wheat and 2½ tons of straw to the acre. These elements of plant food were all combined in the plant residue with organic compounds, the form in which nitrogen usually occurs in the soil. Before the nitrogen or any of the other elements become available for the use of the growing plant, they have to be changed into available compounds, and air, lime and phosphorus must be present in the soil. The air was provided through the intensive cultivation, and the lime, as before stated, had been applied, and the phosphorus was derived from an application of acid phosphate—the only fertilizer applied and the only one necessary under the conditions. Certainly it is not possible under normal agricultural conditions to allow a crop of timothy and clover hay to remain on the land simply as a fertilizing crop, but the incident is not cited for that purpose, but rather to show how to handle soils, when it is possible to have the organic matter, so as to obtain large crop yields.

Rotations for raising crops to provide the leguminous organic matter can easily be arranged so

Hay at today's price is a valuable crop, and a field of clover like this is worth dollars to the crops which follow

that these crops will not interfere with the regular farm crops or they can be used in place of the regular farm crops and show as large or even larger returns and at the same time improve the land, as the following incident will illustrate.

Several years ago a farmer friend of mine after he had harvested his silage corn and after having prepared the land thoroughly by disking and spike tooth harrowing, sowed it with rye and inoculated winter or hairy vetch at the rate of a half bushel vetch and a bushel and a peck of rye to the acre. The soils of the field in question are derived from the limy Hudson river shales. The land has not been limed for years and needs but little lime, in fact the sulphate of lime applied with the phosphatic fertilizer, together with what is naturally present, supplies all that is needed. The sod was well manured for hay a year before it was plowed under for corn and a phosphatic fertilizer at the rate of 150 pounds to the acre was applied with the corn in the row and also with the rye and vetch at the rate of 200 pounds to the acre. The rye and vetch seemed inspired to grow during the fall and went into winter, which happened to be a mild one, with a large growth. In fact it was a question whether it would not have been wise to pasture the crop. The following spring this crop showed that it had not lost its fall vigor and growth began early and with fairly favorable weather continued so luxuriously that this farmer, knowing that rye would head a second time and make an effort at it a third time, and that vetch if cut before it went to seed would make a second effort to produce seed, decided to cut the rye and vetch about 4 inches above the ground for hay when the rye began to head.

The rye and vetch made a second effort to head. When this time came they were cut again about 4 inches above the ground and allowed to remain on the land. A third growth started which was allowed to continue for some time, when the whole was plowed under and the land well disked in preparation to be be seeded with alfalfa. Before the rye and vetch were plowed under a number of square feet representing the best and poorest rye and vetch growth were selected and the roots and tops weighed and an estimate made of the quantity of organic matter contained in these on every acre of this field. It was found that there was a ton and a half of dry matter derived from the rye and a ton of vetch to the acre, plowed under.

A ton and a half of dry matter derived from rye contains 13.8 pounds nitrogen, 8.4 pounds phosphoric acid, 23.7 pounds potassium oxide and 6.6 pounds lime; while a ton of dry matter derived from the vetch contains 55 pounds nitrogen, 12 pounds phosphoric acid, 40 pounds potassium oxide and 15 pounds of lime, or a total of 68.8 pounds nitrogen, 20.4 pounds phosphoric acid, 63.7 pounds potassium oxide and 21.6 pounds of lime to the acre over and above what was removed in the crop of hay and fed to the livestock and the nitrogen and potash largely returned to the soil through the excrement.

All this was obtained without the loss of a crop, without even interfering with its rotation and at the same time getting the land into the best kind of condition for starting alfalfa. There was enough nitrogen, phosphoric acid and potassium in the soil derived from the crop residue from the rye and vetch to make the first two tons of alfalfa hay. It is not infrequently the case that unless there is sufficient available fertility supplied in fertilizer or contained in crop residues to produce the first two cuttings of alfalfa hay, and unless the soil is in condition to be a congenial medium for the activities of bacterial life to convert the fertility contained in the organic residue into available forms, these cuttings ruin the alfalfa.

Pennsylvania.

German Dairy Control

ROBT. W. BALDERSTON

[This is the sixth letter from the secretary of the Interstate Milk Producers' Association which we have published telling about some of the things he does and sees on his mission in Germany.—EDITOR.]

NOWHERE have I seen a better example of the German food control system in operation than in the province of Schleswig Holstein. This province lies in the extreme northwest of Germany and is chiefly in a long neck between the North sea and the "East" or Baltic sea, as we learned it at school. The excitement just now is the plebiscite to determine whether its various "zones" shall join Denmark or remain in Germany. There dairying is a paramount industry and the province has always furnished milk, butter and cheese to Berlin and other great cities to the southward. The soil of the province is not uniform, neither is the contour of the land. You can see every soil type from almost pure sand to heavy clay in an afternoon's jounrney, but the most prevalent is a sandy loam. The eastern part of this peninsular—which lies next to the Baltic sea, is rolling like Pennsylvania—and the western is level, much of the whole province is low and fit only for pasture. The cattle are therefore not housed all the year as in most parts of Germany to be fed soiling crops and roots. So the Schleswig dairy farmer does not worry about summer feed for his green grass meadows are ample to supply his needs. On the other hand, he has always depended on buying concentrates for winter time, like his near neighbors in Holland and Denmark. Now, this is a practical impossibility, for the government has entire control of all grain crops in the country and also of all importations. No farmer is allowed to keep any grain home except a little oats for his horses. The present basis of exchange and the fixed price for milk and butter makes the buying of foreign oil by-products utterly out of the question, anyhow. Therefore the winter production is dependent on hay and roots alone, and this has been the case so long that the calves are now nearly all born in the spring time, so that the cows give most milk during the period of pasture, following the old laws of nature.

The chugging of iron horses is fast supplanting the yelling of weary plowmen

The control of the milk and dairy products when produced is very thorough. Every farmer must register at one receiving station, and always go there for a stated period. The station must make weekly reports, covering production for each farmer and the average butter-fat test. These are collected by the provincial government and a summary prepared to show which are the non-productive herds. These herds are then examined individually and from them are selected animals that must be sent to the government slaughter houses. The receiving stations and butter factories must also make deliveries on a basis of these herd reports. Their weekly statements are also examined carefully to see that no butter is made underhandedly on the farm or in the factory or any milk so sold. Herd tests below 3 per cent. are subject to investigation and also reports of cows being "dry." Any establishment which fails to comply or is found to be guilty of unfair practice is at once closed up for an indefinite period.

The cities are allotted whole milk on a per capita basis, considering only the needs of the sick and the very young children, and the butter is distributed according to instructions from the central government at Berlin. Sales of skim milk cheeses are similarly controlled.

The whole German food control system has very serious problems before it, but none more so than that of getting prices back to the basis of the world's markets. Until the situation becomes more normal and the Schleswig farmer can see a profit in feeding imported concentrates in winter, he will not make any effort to increase his winter supply. The present fixed price for butter at retail is about one-eighth the United States retail prices on the basis of the present rate of exchange, and so there are many temptations to sell some products at a higher price, for many people are able and willing to pay more when there is such a scarcity. It is to the credit of the German farmers and shows their deep-seated respect for authority when one finds such a small part of the product in Schleswig is sold outside of government control.

This little account of my visit to the "Feltstelle" of the Province of Schleswig Holstein serves to tell a little about the kind of government supervision that the farmers over here have had for the past years. Probably there is closer control in Schleswig than in some other places, but certainly it is remarkable how closely the restrictions are kept. Production, however, is not improved by such measures but rather discouraged, so that now the first thing to be done is to get production back.

As I write the city is being contested for by troops and "Communister," and rifles and machine guns bark on every side. Naturally our work is much disturbed by these conditions and we can only hope that there may be a rapid resumption of the quiet and orderly behavior that was so suddenly broken by Berlin events of Friday night last. We were there at the time, so hastened out so as to get down here before the railroad strike that was sure to follow such a move. Now I am unable to get away, though I am due in Hamburg today and Essen on Friday. So I have time to write, you see.

Let's hope you have as beautiful spring weather as we have here and all our farmers are able to get on the land. Let us also hope for improved internal conditions here very soon. Germany was just beginning to get to work again when this political disorder broke out rather unexpectedly and upset everything.

As I write, the farmers over here are busy sowing spring oats, barley and potatoes and also grass seed among the rye sown last fall. We see every kind of implement and every degree of progress in practice. Plenty of oxen are used for daft purposes in Saxony and south Germany and some farmers must use their milk cows, though they seem not to like to make a very common practice of this. The early spring has helped the appearance of the rye which was interrupted in growth last fall by the sudden approach of winter.

Fuel has been so scarce that trees are cut on all sides and are sold in the cities at good prices. We have no heat in the hotels except from this extra wood. The coal ration is all used in cooking.

Enough for this time. I cannot well collect my thoughts with the events outside so exciting.

Leipsig, Germany, March 17, 1920.

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MAY 1, 1920

IN the days of the war—back in 1917 and '18—we told our readers something about the work undertaken by a body of Philadelphia business men, incorporated as the Business Men's War Council of the Pocket Testament League, of placing the Word of God in the hearts and pockets of American soldiers and sailors. A number of our readers were kind enough to write us of their interest in the work and their approval of the articles written for us on the subject by Messrs. Rushton and Karnell of the Council's field staff and Mr. Howard of *The Sunday School Times;* and some sent checks and money orders to help the cause. These, and perhaps some others, will be interested to know how this same group of men have felt led of God to go on with the distribution of His word and the calling of men and women to read it daily, in these trying days of "peace."

The thought of the Council, when the army was demobilizing and the end of the definite task which had brought its members together was in sight, was just this: If men by the hundreds of thousands could be led to take up the systematic reading of God's word as a comforter, protector and guide in the perils of war, why couldn't other men—yes, and women, too—be lead to take it for the same reasons in times of peace?—for their needs are just as great, and God is faithful—Jesus Christ is "the same—yesterday, today and forever." If men need the Word to teach them to die they need it even more to teach them to live. Following this thought the attention of the Council was very definitely lead to the great industrial army right at our doors—an army already "mobilized" in regiments and companies in the plants of great or lesser magnitude, ready for the field workers to come to them, just as they did to the soldiers in camp. And multitudes of these workers never go near the churches—almost within the shadows of which they live—and know little or nothing of God and His Word.

Of course there were the usual number of "insurmountable difficulties" in the way, and, as is usual in God's work, most of them fell before they were reached, while others, when attacked earnestly and prayerfully, proved surmountable. It was thought at first that it might prove difficult to persuade manufacturers to permit their men to be addressed in the shops during the noon hour—in these unsettled times business men are so apt to be ultra-conservative where labor is concerned, and when so many agitators are abroad ready to make mischief they can hardly be blamed for being suspicious. But the fear proved unfounded and meetings have been welcomed in some 400 to 500 industrial plants in and around Philadelphia since the first of last October.

Then there was the question of money to carry out the plan; for the work in the army camps subscriptions came from all over the country—but this was different: there was no wave of patriotism to carry this new work forward on its crest; and then, too, it must be local, at least at its beginning (it was hoped, of course, that it would spread to many other cities soon), and it was not to be expected that people far, as well as near, would be moved as by the war-camp work. Would the needed money be forthcoming? Well it *has*, so far—money to buy the testaments, to support the field workers and to pay the office expenses—and it will continue to come just so long as God wants this particular work continued; of that there is no doubt.

From October 1st to March 1st over 25,000 industrial workers have become members of the Pocket Testament League, agreeing to carry and read the Word of God *daily*, and have been given New Testaments; *4128 of these have openly accepted Christ as their personal Saviour.* A series of meetings have been held in some plants—in one big shop 22 meetings were held and over 1600 men and women became League members—in others only a single meeting. Some of the plants visited have thousands of employees, and a few have had but a score or two. But the story is the same in most of the shops—big and little; the men and women are ready to listen, eager for Testaments, respectful in their attitude toward the Word, glad to hear the Old, Old Story.

And so it goes on. Neighboring cities are taking it up—and some more distant ones, too. God grant that it may not stop until America's industrial workers, from the Atlantic to the Pacific, are Bible reading, God fearing men and women!

And now a question or two: Are all the *farmers* of America daily Bible readers? And are they all *saved?* How about your neighbors, my Christian brother of "THE PRACTICAL FARMER Family"? Doesn't the Pocket Testament League idea present an opportunity for you to do some telling work for the Master? Are unsaved farmers less worth saving or less open to God's Word, than industrial workers in the city? Why not get together, a few of you, buy some pocket Testaments and start out to "sign up" your neighbors to "carry and read daily"? Think it over. Is it a call to you?

The writer will be glad to send P. T. L. pledge cards to any who will ask, and to advise where and at what prices Testaments may be obtained.

EDWARD T. WALKER.

Farm Labor From the Farm Side

OUR Experience Pool on page 163 of this issue presents evidence direct from farmers in five states regarding the seriousness of the present-day labor situation. The general policy of "sitting tight" this year seems to be dominant, as few farmers can compete successfully with the wages offered by the industrial world. The policy, adopted early in the war, of feeding organized labor on profit and agriculture on patriotism is bearing now some of its fruit. In spite of the fact that farm products are bringing today more on the market than they ever brought before, there is no great rush to increase production or general movement back to the farm. Individual farmers who are located close to consuming markets and have plenty of help expect to make more money this year than ever before, but those less favorably situated and dependent upon outside help do not look with favor on present conditions. In Pennsylvania, the secretary of agriculture says, there are 81,140 farms out of the 219,000 which are short of help. The counties around Philadelphia and Pittsburgh report the greatest shortage, but a serious problem is general over the state to have enough men for the planting season. Recently we gave the report from New York showing the great exodus from the farms and New Jersey officials say there is a serious shortage of farm labor in that state also. Nobody need feel that they are alone in a bad predicament because they are not, but each one is alone in finding a way out to the best advantage.

Let them Stop at the End

REALIZING the great temptation this year on account of the unusual labor conditions, to take the boys and girls away from school as soon as there is work for them to do on the farm, the Children's Bureau of the United States Department of Labor is planning a stay-in-school drive during May. Taking this country as a whole, statistics show that twenty adults out of every hundred of the rural population cannot read. Conditions in the southern states make this figure higher than it should be, but leaving statistics aside, all of us know that far too many country children stop school too early, both each season and finally. Only a few days ago we saw a twelve-year-old boy in the field driving four horses with a disk harrow when he should have been in school. He was doing a man's work—indeed what used to be two men's work, but in doing so was spoiling the chances of making an efficient man out of himself. In the cities such a boy would have to go to a "continuation" school for a certain number of hours each week in order to meet the requirements of the law, but as he was in the country the chances are he will stay out of school until things are laid up for the coming winter. Maybe it wasn't your boy we saw, but don't forget to give him a square deal when the temptation comes to keep him home. If there ever was a "penny wise and pound foolish" policy it is keeping an education from the children. With present conditions it is no longer profitable to keep the "dummies" on the farm. Let them go to the city while the "bright" boys work out means and methods to live independent and profitable lives as farmers.

Passing the Buck with Taxes

DOWN in Congress, where the chief occupation seems to be just now to invent new means of taxation, a bill of vital importance to farmers has been introduced. Manufacturers and business men are ready to jump at anything which would reduce the excess profit and income taxes which they now have to pay yearly, so they listen attentively when a proposition to shift federal taxation to land is presented to them. A Washington lawyer named Ralston, who is said to be an attorney for the American Federation of Labor, has written a bill which Nolan, a recognized leader of the labor group in the House of Representatives has presented to Congress whereby a billion dollars can be found for government uses. This Nolan bill (H. R. 12397) provides for a federal tax of one per cent. on the total value of all holdings over $10,000. No matter how much real estate tax or income tax from the farm business the owner may pay he will be called upon, if the proposed bill becomes a law, to pay an additional federal tax. If you own a farm worth $30,000, for instance, under the proposed plan you would have to pay $200 land tax to the federal government. Small wonder that the propagandists pushing this bill claim already 7,000 backers representing thirteen million dollars in capital. To them it looks like an easy way to shift some of the tax burden and unless something is heard from the people on whom the burden is to fall things will move rapidly forward.

Bulletin Helps for Farmers

Farmers' Bulletin No. 1082, "Home Supplies Furnished by the Farm," deals with a side of farm living which is often overlooked. In an attractive pictorial way it presents the farm income, which is seldom measured in dollars and cents, but is of great value in a year's time. In summing up the year's business many suggestions can be had from this graphic nineteen-page bulletin.

The Garden in May

W. F. MASSEY

Many people get the garden fever with the coming of May and they plan and start well, but when the weather gets hot their enthusiasm is burnt out and everything grows in the garden except the things planted. A garden must be taken seriously as an all-the-year matter if you are to have a real garden.

The first thing we are apt to get from our garden is asparagus, and to most people this is a very welcome vegetable. If you have no asparagus bed in your garden it is easy to make one by sowing the seed in a spot made and kept very rich. Make trenches 15 inches deep; two and a half feet apart. Fill half full of rotten manure. Cover with earth and sow the seed thinly in a row. After it gets up finger high thin to two feet apart and work the soil to the plants as they grow till level. Fertilize twice during summer with nitrate of soda and cultivate clean and in late fall when the tops die, cut them and cover the bed thickly with manure to be dug in when spring comes. Do this annually and the second spring you can begin to cut some. Never dig and transplant the roots but grow the bed from seed right where you want it to stay and you can get the asparagus a year sooner than by planting roots.

You can plant the Black Valentine beans the first of the month and can plant the better Red Valentine later. The Black Valentine is hardier and early. The Celestial is one of the best wax podded beans.

For cucumbers and muskmelons make hills with a shovelfull of manure and a handful of acid phosphate, pull the soil over and plant plenty of seed. Make the hills 4 by 4 feet apart. As soon as the plants show above ground make a mixture one part calcium arsenate and two parts air-slaked lime and keep the leaves dusted with this till well-established rough leaves are made. This is to destroy the diabrotica, striped beetles.

Give the early cabbage plants a side dressing of nitrate of soda to push them along. Transplant celery plants as soon as two inches high, pinching the tap roots and set them in a bed in rows six inches apart to get stout and well rooted for the final transplanting.

Tomato plants that have been given room and hardened in cold frames can be set in the garden from first to middle of the month according to climate. Keep egg plants under cover till late in the month. Never transplant any plants directly from a hot bed to the open ground. Always set tomato plants in cold frame and then give air at all favorable chances and finally keep uncovered a few days before setting. It pays well to set tomato plants by six-foot stakes. The tomatoes will be earlier and there will be more of them than on the ground. Set them in rows three feet wide and set the plants two feet apart and train them to single stems tied loosely to the stake. Spray the plants with Bordeaux mixture as soon as set and then repeat every ten days till the tomatoes are two-thirds grown. This is to prevent leaf blight. If deferred till leaves begin to show the disease you cannot check it.

As soon as the old potato bugs are seen crawling around and laying eggs, dust the plants over with the lime arsenate mixture above. It will kill some of the old ones and stop their egg laying. Then after the larvae have hatched and before they have done damage dust them over and that will usually answer. The same dust is used on egg plants and tomatoes when the potato bug attacks them.

Use some nitrate of soda alongside the rows of spring sown spinach, for it must grow fast to be of any use. It soon runs to seed. The same is true of all leaf crops like lettuce, cabbage, etc.

If you cannot get old rotten manure use the pulverized dried sheep manure now sold in 50 pound sacks. With one-fifth of the acid phosphate mixed with it it answers a very good purpose and is easily handled.

Plant okra seed in rows, putting seed in about three inches apart and later thinning to eight inches. It starts and grows slowly till the soil gets fully warm.

Thin beets to three inches and these too will be helped by nitrate of soda—not touching them, but alongside the rows. Sow seed of Improved Brunswick cabbage to make plants for the fall crop and last of month sow Late Flat Dutch for winter plants. Keep the garden cultivator going and allow no weeds to grow. Cauliflower plants too will be greatly helped by side dressings of nitrate of soda.

Sow some green curled endive to take the place of lettuce in hot weather. We have conical covers made of card board to set over the plants to blanch them. Of course they are transplanted from the seed bed just as lettuce is. The lettuce plants should not be allowed to get a check from drought. They must be grown fast to get headed before the hot weather. Use the nitrate by them repeatedly.

Have the lime arsenate mixture at hand for all insects that bite plants. I shall try it on the rose chafers which here destroy not only the roses but all the grape bloom if not checked.

Plant a row of string beans as soon as the row previously planted is well up and leaved out. This will make a constant succession of plantings till August. I have tried nearly every string bush bean offered for years and for a green pod bean I have never found one better than the old Red Valentine. The Black Valentine is earlier and more hardy and can be planted earlier, but is far inferior for table use. I use the Davis Perfect cucumber and find it the best.

THE SPRING HIGHER UP

EDGAR L. VINCENT

QUITE by chance one day while exploring a gulf at one side of my farm, I came upon a fine ledge of solid, blue-stone rock, lying partly in the bottom of a little stream which came gurgling down from the woods above and partly under the right bank of the creek. The dream came to me to take some of these stones from the quarry for a new underpinning to the old house we had recently bought.

It was warm working there with hammer and drill, bar and blocks, and I. felt the need of water. But the water which trickled down the channel of the creek was not very cool, so I set out to find the spring which it seemed to me must be not far away. Up the gorge I started, hat in hand; and that bit of rivulet led me a strange chase. Sometimes the water would disappear, falling down through some fissure in the rocky bottom, only to reappear far down the gully. Then I would wonder if there really were any spring, or whether the stream were not one of those "dry weather" brooks we sometimes see. But on and on I pushed, higher and higher up the hill until at last I reached the object of my search, a tree-shaded spring, with clear, cold, refreshing water flowing right out of the heart of the rock.

Before now have you not known a strange thirst of the soul that nothing seemed to satisfy? Perhaps you sought to quench this thirst in the better farming you would do. Sometimes it seemed to you that if you were to get some position where men would look up to you and respect you more highly, that would bring your longing to an end. At other times you dreamed that more money in the bank, more friends to love you and more of the world's great things would satisfy you. But after you had done your best, there was still the same ache in your heart. Days came when, like the water falling out of sight in the hillside stream, your peace dripped itself away and was lost.

It was only when you turned your back upon all these things and set out for the Spring Higher Up, the fountain away yonder on the hills where God has His home, only there was the thirst of your soul satisfied. In His word, in His service, in His love you found "the peace that passeth all understanding."

To Make Crops Grow

In the farm crops grown in a 5-year rotation at the Ohio Experiment Station, nitrate of soda used alone has increased the total weight of crops by 19 per cent., while acid phosphate used alone has increased the weight by 31 per cent.

When the two applications of nitrate of soda and acid phosphate have been combined the yield has been increased by 60 per cent.

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Effect of Fertilizers on the Corn Crop

A. E. GRANTHAM

Under the average conditions of soil and season it is not difficult to grow a fair yield of corn as measured when it comes from the field. The corn may measure or weigh out 60 bushels per acre at the time it is husked, but every grower knows that the yield of air-dry grain may be much less. The shrinkage in weight from husking time until January 1st is often 15 to 20 per cent. This represents the shrinkage on the well developed ears and not on the nubbins and poor ears, which may represent a considerable percentage of the crop. Unsound corn and poorly developed ears are largely the result of season or soil conditions. A backward spring, resulting in late planting will often cause an immature crop. For this reason farmers are anxious at this season of the year to get the corn planted as early as possible. However, the time of planting is not the only factor concerned in the proper development and maturity of the corn crop. The fertility of the soil has almost as much influence as the time of planting, within certain limits. Undoubtedly much of the immature corn each year could have been brought to a better degree of maturity if the proper fertilizers had been used.

Thin soil does not mature corn as promptly as a fertile soil. Likewise, if the mineral elements, phosphoric acid and potash, are deficient in the soil the corn is likely to be late in maturing, even though the plant is well supplied with nitrogen. This lack of balance between the various elements of plant food is shown clearly in the corn belt, where the land is becoming deficient in phosphoric acid after several years of cropping without the use of fertilizers. This has led many corn growers to believe that their varieties of corn are not suited to their season because of the late maturity. The trouble has been, not in the variety of corn, but in the condition of the soil with respect to the available supply of plant food. Experimental work at the Delaware station has shown that the addition of phosphoric acid and potash to the soil in connection with green manure crops will make a difference of a week to ten days in the maturity of the corn over that where no fertilizers have been applied. Complete fertilizers carrying all three elements, including nitrogen, have not only greatly increased the yield but hastened maturity and lessened the percentage of unsound corn. By actual test it was found that the unfertilized land produced 42 bushels per acre of corn, 25 per cent. or 10 bushels of which, as soft or nubbins, as against 70 bushels of corn from the fertilized land, only 3 per cent. of which was nubbins. On the basis of sound corn at time of husking, the unfertilized land produced 31.5 bushels per acre, and the fertilized 67.9 bushels per acre. This is not the whole story. Samples of ear corn from both of these tracts of land were put up to dry in a crib until January 1st. The unfertilized corn shrunk 25 per cent. in weight, while the fertilized lost only 10 per cent. Figuring the yields on the air-dry basis the untreated corn produced only 23.5 bushels as against 61.1 bushels for the fertilized. It was further found upon shelling that the fertilized corn produced about three pounds more grain per weighed bushel (72 lbs.) of ear corn, than did the unfertilized. This indicates why the yield between fertilized and untreated corn may be much greater than is indicated at husking time.

The early planting of corn should not be discouraged, providing the soil is in condition of fertility to give the plants a quick start. The presence in the soil of a reasonable amount of available nitrogen furnished by a good fertilizer will often give the plants a quick start enabling them to overcome the effect of a period of cold wet weather, which often occurs soon after planting. Putting the seed into the ground at an early date is a severe test or strain on the vitality and in many cases the plants may be permanently weakened, if the soil is not well supplied with a sufficient supply of available plant food. There is no question that the use of the proper fertilizers will result in a larger yield of prime quality of grain, thus offsetting the losses occurring not only from a poor start of the crop, but also from the large shrinkage due to an immature crop.

When Should Alfalfa be Cut?

It is none too easy to get a good field of alfalfa. It is very easy to injure the crop more or less seriously by cutting it too early or too late. In fields where the alfalfa is cut daily for several weeks as green feed, injurious effects have been noted from cutting at different times.

The most common mistake, especially with beginners, is to allow the first cutting to stand too long. The appearance of blossoms is not a good indication as the weather has much to do with the time of blooming and the crop should generally be cut before blossoms appear. The appearance of the new growth from the crown is the surest sign to go by. One should look at the crowns, close to the ground, every few days and when the new buds begin to come out, the top has made about as much growth as it will and should be removed to make way for the second growth.

The first crop has not yet reached its maximum development and there will be some delay in the starting of the next crop, if alfalfa is cut before the new growth starts.

If, on the other hand, the new growth is over an inch high, the top of it will be cut off in mowing and another set of buds will have to start unless the crop is cut high.

Cutting late seems more injurious than cutting early, as regards the first crop at least, and should be avoided if possible, even though it often seems advisable to wait for more settled weather. The first crop is generally ready to be cut about June first.

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A Memorial to a Good Apple

A huge boulder, bearing a bronze tablet properly inscribed, will be erected and dedicated as a memorial to the origin of the famous "York Imperial" apple, on a farm on the outskirts of the city of York, Pennsylvania, during the coming summer. The idea originated with and has been promoted by the department of horticulture at the Pennsylvania State College, and is being carried out by the Pennsylvania State Horticultural Association. The dedication will take place during an automobile tour by the association in connection with the annual meeting in July or August.

The York Imperial was first propagated on the farm now owned by John C. Schmidt, just outside of York. The memorial will be placed on the road side of the field in which the first tree of this variety was grown. This well known and widely grown apple was the result of a chance seedling found in the year 1830. Its flavor and appearance have made it the best known variety of Pennsylvania origin and it is the most popular apple in the southern part of the State. Dr. S. W. Fletcher, head of the college department of horticulture, is chairman of the committee that is making arrangements for the memorial, and the State association is financing the step. This will be the first memorial of its kind ever erected in the State of Pennsylvania.

Fresh Raspberries all Summer

Fresh home-grown raspberries all summer long and until frost comes in the fall! That is the delightful prospect which the United States Department of Agriculture holds out to the gardener who will plant one or more of the autumn-fruiting varieties of raspberry plants which it recommends. The department points out that European gardeners have grown autumn-fruiting varieties for many years, and some of them are of highest quality. It is particularly important that the American gardener secure varieties that will survive in this country, since in many sections our climate is too severe for the European varieties.

Two good autumn-fruiting varieties, the Ranere (St. Regis) and Erskine (Erskine Park) have originated in the United States and are now in the nursery trade. The Ranere was found near Hammonton, N. J., and was grown by the hundreds of acres on the sandy soils of southern New Jersey before being introduced into the trade. It is the principal commercial raspberry of New Jersey, and seems destined to become the leading sort along the Atlantic coast states as far south as southern Georgia. The variety may be found fruiting freely throughout the fall months in Atlanta, Ga., and even farther south where other varieties do not succeed.

In the cooler parts of the northern states, the Ranere produces fruit of too small size and of too poor dessert quality to be of great value. However, the berries borne on the young shoots in the autumn are larger in size and better in quality than those of early summer, and if pruned after the English system, where all the old canes are cut out in late autumn or early spring, it should be desirable in many northern gardens.

The Erskine raspberry, which was found by a resident of Lee, Massachusetts, in a patch of the Marlboro, bears larger fruit than the Ranere. The fruit is also of better quality, and if it proves as hardy and bears as well throughout the northern states as it has under the care of the one who discovered it, it should be especially desirable. The Erskine seems to be a hybrid between the American and European red raspberries, and should be tried wherever the Cuthbert and Marlboro succeed.

Clean Fruit Comes from Spraying

So pernicious and active are the apple insects and diseases that a complete spraying program must be carried out to produce clean fruit, according to entomologists at the Ohio Experiment Station.

San Jose scale may be controlled by spraying with lime-sulphur before the leaves appear. The next spray must be made just after the petals fall, with lime-sulphur combined with arsenate of lead, one pound of powdered or two pounds of paste to 50 gallons of water. This spray controls codling moth, apple scab, black rot and canker worms.

The third spraying for apples, made from 10 to 14 days after the second spraying, is applied to control all diseases and insects missed in the second spraying.

A fourth spray is applied nine to 10 weeks after Spray No. 2, to control bitter rot, codling moth and blotch.

Time to Get the Peach Borers

Peach tree borers which attack peach, plum and cherry trees can best be controlled by cutting them out of their burrows in late May or early June according to entomologists at the Ohio Experiment Station. The use of poisonous sprays, repellent washes, and mechanical barriers have not been effective in experiments to control this pest.

The borers can generally be located by exudations of sawdust-like materials near the base of the trees. The younger borers may also be found in diseased and wounded areas on the upper part of the trunk. There are two species of borers which may be cut out at the same time.

Orchardists point out that it is necessary to treat the tree wounds after the borers are cut out with lime-sulphur solution, Bordeaux mixture or white lead, as these materials help to keep diseases and other insects out of the wounds. Thorough spraying and culture methods in orchards tend to produce fewer areas where the borers can work.

Ration for Feeding Chicks

A satisfactory ration for young chicks, as determined at the Ohio Experiment Station, consists of a mash mixture of two parts by weight of ground corn, three parts bran and one part meat scraps. The mash is fed three times daily until the chicks are four weeks old and then the mixture is kept before the chicks in self-feeders.

From the third day until the fourth week the chicks are given constant access to a trough of dry bran.

During the first two weeks a mash is fed daily made from equal parts of the mash mixture and infertile eggs boiled for about 30 minutes and then ground through a food grinder.

Cracked corn is also scattered on paper twice daily during the first few days of feeding but later it is given in the litter when the chicks learn to scratch for it. Grit and water are provided at all times.

This method of feeding is continued until the pullets reach maturity, when they should be given a laying ration.

Three to four per cent. of the Pennsylvania oat crop is lost each year through smut. This means an annual loss to the state of over a million bushels. At 81 cents per bushel (average 1919 price) this loss amounts to about $800,000.

There were 4,288 different brands of feeding stuffs registered with the Bureau of Chemistry, Pennsylvania Department of Agriculture, during 1919. These brands were covered in 1,015 registrations.

Two crops of potatoes a year. Practical. Easy. Doubles your profits. Don't miss A. G. Cook's seed and potato offer, on page 161. Tell your friends. Name P. F. when ordering.—Adv.

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From our large vigorous M. Bronze, B. Red, Narragansett, White Holland, $4.00 for 6; $7.75 for 12. B. P. Rock and S. C. R. I. Reds, $2.00 for 15; $10.00 per 100. All eggs prepaid, by mail or express. Orders get prompt attention. WALTER BROS, Powhatan Pt., O.

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Well hatched, well bred, from best heavy egg strains of Reds, Rocks, Leghorns, Wyandottes, etc. Our hatcheries, East and West, ship anywhere. FREE BOOK.
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Also extra special bargain in Red and Green slate surfaced remnants at $2.10. This just like first grade which sells for $5.00 per square except that slate surface is not put on as smoothly.
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EGGS Langshans, Brahmas, Rocks, Wyandottes, Reds, Orpingtons, $1.50 per 15 prepaid. Send for free catalog. M. H. MYERS, Edom, Va.

The Farm Labor Situation

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1292, JUNE 1.—What is the outlook for dairying in your locality? Are herds being increased or decreased? How is the milk sold, and what price does it bring on the farm? How does everything compare with conditions five years ago?

TOPIC No. 1293, JUNE 15.—The corn ought to be making a good growth about this time. How is the best way to handle the crop from now on so as to get the biggest yield? What style cultivator do you find does the best work? Do you raise a special patch for seed only or select the seed from the general field? Do you detassel the barren stalks?

J. E. F., Wellsboro, Pa.—The farm help situation looks mighty gloomy indeed; there is no help to be got for farm work. All have gone to the cities, towns and railroads. There are but four young men on forty-five farms in this locality. No young farmers, the youngest are 35, and range from 35 to 78 years. What the outcome will be I surely don't know. We need a man, but don't know of one to be had. Nobody wants to work on a farm at any price. All are aiming for the shops and factories, where less hours per day are required.

As I see it now it is up to us to produce what we can, and let the rest go until the world goes hungry. Then the labor problem will adjust itself. Labor shortage has been coming on for a number of years prior to the world war, then the war and war prices put on the finishing touches. All industries (except farmers) could pay any price for labor during the war and were guaranteed a 10 per cent. profit. The more money they paid out the more profit they made. The farmer was left with his wife and daughters (if he was lucky enough to have any) to do the farming, and they sure did produce. Since the war very few soldiers have become "stubble hoppers," as they are called by our city and town cousins.

There is a large glass factory located at Wellsboro. It is using all the help available at prices out of reach for the farmer. Forty-five cents to $1.25 per hour are the wages paid by this factory. There are a number of good roads under construction which pay $4.00 per eight hours for man, $8.00 per day for man and team. Carpenters have formed a union so any man that can drive a nail can join, no matter whether he can saw a board off straight. Seventy-five cents per hour are the wages demanded. Now what are we to do? My only son wanted to join the above great army of workers, but I persuaded him not to. I told him we would grow all the produce we could grow by working eight hours per day and we would take a vacation now and then, and let the wind blow "high or low." If we had a little produce to sell, perhaps we could find a market for it.

Milk is the chief production of the county and I know that we could not find a hired man that would milk and deliver the same to the condensery; we feed the cows and pasture them. We are not getting enough for the milk to pay one man's wages like other industries pay. Just think of it, milk testing 3 per cent. $2.60 for 100 lbs.; corn feed $3.85 per hundred. Hi lee! Hi low!

C. C. C., Jr., Penn Laird, Va.—The farm labor situation in this section has become a serious problem. So serious in fact that practically all farmers depending upon farm labor for full production, as most men do, are decreasing production to the point of doing what they can without labor, which, in many instances, is little more than personal requirements. However, we have no hungry farmers in this section. With the exception of a few necessary things we are forced to buy at four or five prices, quality considered, we can live in perfect comfort the remainder of our lives under present conditions. Nearly every farmer in this section is now settling down to this without worrying his brain about production.

Farm labor in this section ranges from $40.00 to $70.00 a month if one is fortunate, or frequently unfortunate, enough to find it at all. We cannot afford to pay such wages to a man for feeding $3.00 corn to 12 cent hogs and cattle, selling the hide of the latter for a starvation price and buying it back in shoes at $3.00 and $4.00 per pound. Generally speaking, farm labor is being well treated in this section. Comfortable houses are usually provided for tenants with a garden, truck patch, firewood, etc., thrown in. Frequently the hired man has Saturday afternoon off and given solid time. While many women work in the field of their own free will, but few, if any, are being employed in this section for farm work. The help problem has greatly affected our usual method of farming. We are decreasing production and increasing the use of labor-saving tools and machinery in an effort to continue a business, even in a feeble way, that we have provided an expensive equipment for. We hope someone will want something to eat later on that we are in business to produce, when we feel we will be given, providing the appetite is sharp enough, a fair deal.

B. B., Tully, N. Y.—The labor situation here is acute, alarming, serious. There are no laborers to be had. They are leaving for the big wages, shorter hours and amusements of the city as fast as they can go and some of the farmers are going with them.

The farmer cannot compete with the manufacturer's wages. He does not know how much what he produces will bring; the manufacturer does.

If the farmer wants to set a fair market price on his goods, the governor, the congressman, the senator and a lot of the rest who are city people themselves, interfere. They call him a profiteer and establish laws that bind him hand and foot until he resolves to quit farming himself.

Many farmers here are planning to raise no more than what they and their families can take care of. Many have decreased fifty per cent. in value, but a pound of steak in the market costs more than ever. Many are complaining that their milk checks last winter did not cover their feed bills.

Those who are fortunate enough to find men who will work on farms are paying from $60 to $70 a month with board and other privileges and $90 to $100 a month without board.

There is some kind of Women's Land Army or something of the sort connected with the university in the city not far from here; but, so far as we know, its chief object seems to be in getting snapshots published in the photographic section of the Sunday social paper while engaged on the place of some aristocratic city farmer who has a farm for a plaything. The real, down-to-the-sod farmer does not get them—not here, at least.

Mrs. A. B., West Valley, N. Y.—The labor situation is a serious one with the farmers here. It is almost impossible to get help out doors or in. The few who find help have to pay such exorbitant prices that it almost seems better to leave part of the work undone than to pay so much. Single men get $60.00 to $75.00, and even more, with board and washing and many privileges, but for an ambitious owner or renter of farms it is very trying to come to work. For instance, sugaring at this time (March 25th) is on and with the scarcity and high price of sugar, people are anxious to make all the maple sugar they can, but as this work comes when there is so much else to do, some with good sugar bushes can only tap part of their trees and some none at all.

One young married man of my acquaintance was offered by the year $75.00 a month, rent, fuel, milk, meat, potatoes and 20 gallons of syrup, but he decided to rent a farm and now he is up against the labor problem.

I do not know of any one hiring women or girls for out-door labor in this vicinity, but farmers wives and daughters have to help out in many ways. Milking machines are being installed and women can tend those, and later, with sulky plows, women will be helping with the plowing. But one may really suffer for lack of help in sickness and housework, as girls are too busy at other things.

Mrs. E. M. A., Ashville, N. Y.—The farm help situated here is just as it has been for three or four years, unless possibly a trifle more acute, but farmers are accommodating themselves to it so that few are seriously inconvenienced. Indeed, farmers are so much fewer that the little help available "goes around" about as well as formerly; there is practically no help and no one wants any at the prevailing price. A single man gets at least $50.00 per month and board, while a married man is supposed to receive an equivalent sum—the same wage and a house with various things furnished, such as milk, wood, etc. A few in our section hired "farmerettes" one year but it is noticeable that no one repeated the experiment. Yes, the labor situation, the dairy situation, and various other rural situations have affected our usual methods decidedly; we used to be dairymen, now we produce milk and butter for home use only; we never hired much, but now, in common with our neighbors, we are cutting our own operations so sharply that we mean to have a margin in which to do other work than farming for a living, though we shall still live on the farm.

J. U., La Fargeville, N. Y.—In this locality some single men are to get $1000 for a year with board and lodging, of course, and they will in some cases want a horse to drive occasionally, unless they have a car, and in this case they will want a place to store the car. Married men will get a house to live in, a quart or more of milk a day, garden, in some cases firewood, and enough wages to bring the total up to about $1000.

Last year there were some girls and women who worked in the fields driving teams on pulverizers and on sulkey plows, for years they have helped in haying by raking and by driving team on the hayfork, also by driving team for a man to load after a hay loader.

Some have mowed and even driven binders, and of course have helped milk and draw it to the factory.

Many of the farmers will cut down the acreage planted and will also reduce their dairies, as they say they cannot pay the wages asked, and now that the milk market is so uncertain they will be more unwilling to hire high-priced labor.

There are many advertisements in the papers for farm help and those who own and work large farms are offering good men almost any wages in order to get them, but the average farmer feels that he cannot do so.

E. C. B., Sidney, N. Y.—The farm labor situation in Delaware Co., N. Y., looks bad, so much higher wages with shorter hours are being paid in towns and cities, that it is getting most impossible to get good farm help at any wages that the farmer can afford to pay. Sixty to seventy dollars per month by the year being offered, with board and washing for single men. House, garden, firewood, potatoes and milk furnished free without board to married men. It is impossible for the dairy farmer to cut down to an 8-hour day and much of the help wants a short day. It looks as though some day someone would go hungry, as many are leaving the farms on account of the help question. Many are putting in milking machines, which helps out some. Last year I sold a farm that was larger than I could work alone and bought a smaller one. I know of several farms that were worked last year where there is no one now. Girls or women have not been hired to any great extent in this section.

A. J. L., Albion, W. Va.—The farm labor problem in this part of the country seems to be a thing of the past, as it is impossible to get farm help at wages that the farmer can afford to pay. In a few instances farmers have succeeded in getting some help by furnishing a free house, garden, truck patches, and allowing the laborer to farm a part of the land on shares. Then such labor will do some work for its employer.

In such cases the laborer gets about $1.50 per day and board. In harvest time farmers have to pay $2.50 or more per day and board.

There is but little help hired however by farmers, as most of them have decided to do just what they can and let the labor problem solve itself in course of time.

M. G. F., Dryden, N. Y.—There is very little farm help to be had here. Six farmers on one telephone line are all in need of a man for the season and can get none. We have had to grow less crops, especially those that require extra cultivation and care, and for this reason, and also because we can't find good markets for our milk, we are decreasing our dairies and raising less heifer calves. Farmers are overworked and discouraged, and when they see the school advantages that their children have they feel like saying, as did one of our heretofore most loyal country residents, "I can't stand it any longer, we'll move to town."

As for women or girls to help in the home, there are none. And when our people get sick they can only depend on one another, as there is no hired help to be had.

W. A. G., Vincennes, Ind.—The farm labor condition in this splendid general farming and stock growing section of the Union is very bad. Seems to grow worse instead of better since the war. In the first place, most of the farms are too large to be handled in the right way without much help being employed. The only help proving stable and satisfactory is found by employing married men. The young men are mostly in the mines and factories. Married men with any sized families would most all work in the above employments and others, but they cannot rent houses.

The condition is serious. Building material is so dear and workmen demand such big wages, that tenant houses are not being built. The result is, general farm crops will only be about one-half what they should be. Grass for grazing and meadows fill thousands of fertile fields. That cuts down the demand for farm help, but the high value of land, and the tremendous expense of taxes, keeping up fencing, buildings, etc., wipes out most of the profits. Still, the owners of the big farms being wealthy, none of the land can be bought, and getting the land largely in grass, the demand for laborers is rapidly falling off. If the whole country did not need the grain, vegetables, etc., it would not be so bad, but production of the great farm staples is badly on the decline. We wonder as to the final results.

Two to two dollars and a half per day with board, washing and Saturday off, is demanded by such single men when they are found. Married men, if the houses are to be found, want about the same. They want some pasture, fuel, extra time for working a truck lot, and to keep some pigs and poultry extra. None of the women hire out to do farm work. Scarcely any to work in the homes. Time may regulate matters, but it is feared not.

The Women's Exchange

This is the farm women's *own* department—for them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JUNE 1.—It is none too early to talk and plan about a Fourth of July celebration. Tell us about a successful family or community event which was a success in celebrating this eventful day. Don't forget the children's part, so tell us we can have more fun and fewer accidents.

JUNE 15.—What advantage do you take of the great outdoors for summer living? Maybe you move your kitchen, dining or bedroom to get away from the excessive heat, or have a rustic arbor or summer house where you can transfer many household duties. We would like to know also of any outdoor summer furniture which is cooling and restful for a hot day.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Beds and Bedding

(Miss) E. G., Buchanan, Va.—Having tried all sorts from trundle beds, grandmother's corded four-poster and campmeeting bunks on up the line, we prefer metal beds, double-deck springs and good felt mattresses.

Protection underneath is equally important as plenty of cover and does not impede circulation as too much weight on the body does; so we supplement the usual cotton-filled mattress pad with one pieced of the better parts of worn out heavy wool clothing, interlined with worn blankets or lighter weight woolen goods, lined with shirting or other strong cotton goods and tied, not quilted.

For covers we like wool blankets and comforts padded with wool bats which are so soft, light and warm that one such cover is better than two or three of the usual cotton bat comforts. We piece tops for comforts from scraps and remnants of sewing, being careful to use those of like weight and material in the same quilt.

Much washing of bedding is saved by using cheese cloth or muslin protectors folded over the ends of covers and basted or fastened with medium safety pins. These protectors are about eighteen inches wide and long enough to reach clear across the cover. They may have fancy stitched hems if you like, but the main point is keeping the covers clean and having fresh material next to the face.

Bedrooms are more restful when very simply furnished and are so much easier kept dainty and dustless; besides there is no danger of damage from wind or damp air, for, of course, we all sleep with windows wide open these times.

A traveler finds that spreading newspapers under mattress and between covers and warming the sheets with a hot lamp chimney sometimes gives him a comfortable night that would otherwise be spent in shivering wakefulness.

Mrs. O. J., Rio, La.—On purchasing beds, I have learned that the best coiled steel springs and good mattresses are the cheapest; they last longer and give better service.

I make covers or slips of stout goods to draw over the mattresses and keep them clean. A layer of old newspapers or magazines on top of the springs will prevent them cutting in and rusting the mattress.

Feathers to sleep on are condemned as insanitary by best authorities. A feather bed, that has served, in sickness and health for generations, is not a desirable place to sleep. We have feather pillows but like a filling of pine needles, covered with a layer of soft cotton better, especially in warm weather.

Since the days of Hoover I have learned to use old blankets, curtains and worn out clothing to fill comforts. I cut all the seams and thick places, spread a layer on one half of cover, then a thin layer of cotton, put on the other cover and tack. I use thread raveled from old wool caps or sweaters for tacking. It should first be hanked and washed well, redyed if necessary. I watch the bargain counters for remnants of good fast-colored sateen or prints for covers. I have made several the past season from flour sacks. Some of these I colored, some were left white. The latter I made rather thin, filling with white goods. They stay clean longer than one would think, and are easily washed.

If strips of calico, or other material, about eighteen inches in width, are basted, like facings, over the top ends of comforts, they will not get dirty so quickly. The facing will protect them from sweaty hands, and may be taken off and washed when necessary.

Mrs. J. C. H., Waynesboro, Va.—I have been called a "crank" about my beds but nevertheless most of our relations like to come and sleep a few nights in "Aunt Bettie's" good old-fashioned beds. My ideal bed is a good steady wooden or iron bed with good springs, not the kind that go down in the middle and up at the head and foot. I like a felt mattress made in two pieces, a ten-pound feather bed, feather bolster and pillows, not stuffed too tight. For every day use I want sheets made of unbleached sheeting, also unbleached cotton for pillows and bolster slips, the kind that soon bleaches. I use cotton blankets on all my beds instead of the top sheet, they are so soft and warm in winter. Using the older and more worn ones in summer. Of course, for my guest chamber I use the bleached.

My "comforts" are all home-made, and now, since cotton batting is so high and inferior, I am careful to cover all my lightest weight ones before they are too far gone, washing them nicely first.

I like white bed spreads for top covers, although I have a few old-time quilts our grandmothers made, but only used occasionally.

I have always given my children and hired help comfortable beds. In fact I haven't a bed in my home that has not good springs and a feather bed. Although some of them have instead of mattresses, straw ticks that are washed and replenished every year.

I will keep up my supply of bedding no matter what else I have to go without. When a person is sick what a great blessing it is to have a comfortable bed.

Miss M. M., Fairview, Pa.—I won't say that my bed is my best friend, but it is the best bed I ever struck and it's a perfect pleasure to sleep in it.

The bedstead is just an old-fashioned, light wooden one that is easy to move. The folding, spiral springs with a woven wire top seem to be the best springs that are made. The excelsior-filled, cotton-top mattress is in two pieces so it can easily be changed about.

After using springs and mattress I would never go back to the old straw and husk ticks that we used years ago and don't want a featherbed anywhere near me. I like sheets that are long and wide enough to tuck in all around, nice, big cotton blankets, light weight comforters, thin quilts and soft pillows. I don't like great, big, stiff pillows that are so plump that it hurts your neck to sleep on them or great, big, heavy comforters that pretty near kill you when you wash them, and don't see any sense in having bedsteads that are so heavy that it takes every bit of one's strength to move them.

I like slips made of pillow tubing, but once made the mistake to carefully cut them straight and every one is crooked. I have learned since that tubing must be torn and not cut. We iron sheets and pillow slips in the winter so as to be sure and have them dry, but use them without ironing in the summer. They are pulled nice and straight on the line and folded right off the line and nobody notices the difference.

I wear Quaker Comfort shoes and find them to be "comfort" shoes. When they get too shabby for dress shoes wear them for everyday and buy new ones. They are not as expensive as some others.

Mrs. H. J. H., La Grangeville, N. Y.—Have the best bed possible, it adds to the health and happiness of the family. Do not put the softest and best away in a spare room that is only used perhaps two weeks in a year. Let the tired housewife use the best,

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9632.—Ladies' waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. The attractive collar may be buttoned to give an entirely different neckline if desired.

9631.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. Buttons let one know that this frock buttons at the side-front.

9628.—Ladies' blouse. Cut in sizes 36, 38, 40 and 42 inches bust measure. A fascinating blouse of the tie-on type, has a novel sash arrangement to adjust the fullness.

9607.—Child's one-piece dress. Cut in sizes 2, 4, 6 and 8 years. Waist-length panels grace this one-piece frock of dotted Swiss and are held in place with the tiniest belt.

9619.—Ladies' one-piece dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. Deep ruffles are used to give this one-piece frock youthful lines. The closing is on the shoulders.

9121.—Girls' dress. Cut in sizes 6, 8, 10, 12 and 14 years. A soft vest of tucked batiste adds a relieving touch to this practical dress of plaid gingham.

9624.—Ladies' housedress. Cut in sizes 36, 38, 40, 42, and 44 inches bust measure. The vest is set-in and the three-gored skirt is gathered.

9621.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. A sensible skirt for business or general wear cuts its sides to form trimming pieces.

9611.—Girls' and child's kimona. Cut in sizes 1, 2, 4, 6, 8, 10, 12 and 14 years. The sleeves are in one with the back and front and the long front edges are faced with satin.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address
FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

it pays. I would advocate the white enameled iron bed—brass if one can afford it. Purchase not too heavy mattresses, the very thick heavy ones do not allow the spring to give as a thinner one does.

If one has the old-fashioned wool sheets that the grandmother made, use them; as covers they are light, warm and easy to launder. Cotton pads are "away up" in price, so I have tacked an old thin bed spread together with a part-worn sheet and it makes an excellent cover for the mattress of a good bed.

It is said that much cold comes up from the floor in winter time and if one would use plenty of wrapping papers under the mattress one would sleep warmer and require less covers. Surely a good thing to consider now when prices are soaring.

To experiment I took some faded scrim curtains, sewed the strips together as one would for a tatk, and in the place of cotton I spread ten thicknesses of newspapers and tacked together, at no expense whatever. Now each member of the family wants one on their bed. They are such a protection and the children are delighted to help in summer out on the lawn.

Use the old-fashioned linen sheets in hot weather, they are so cool.

M. A. C., Newtown Square, Pa.—While the brass or metal beds are very hygienic and no insects can thrive in their crevices, I think those of wood seem more restful and free from draughts, also make a room look more completely furnished.

All springs should have a cloth or blanket of some kind spread over them before placing the mattress upon them or they will soil and wear the mattress by rubbing.

A good cotton felt mattress is superior to the more expensive hair mattress. We have both kinds. The hair in time works through the covering and annoys by pricking, and it is not so restful as the felt, as it soon seems to pack solid. I suppose there is such a small amount of hair put in with the fibre, which is the cause.

Any mattress will last twice as long if it is turned about. The larger section of a mattress is made square so that it will fit as well when placed crosswise of the bed. Once a week this change should be made. The short section should be placed sometimes at the head of the bed instead of always at the foot. Thus the wear is distributed evenly over the entire surface.

Homespun Yarn from Ithaca

This is from a washing-machine advertisement: A man will pay $225 for a binder, use it two days a year; $65 for a planter, use it two days a year; $130 for a wheat drill, use it two days; and let his wife rub, rub, rub on a washboard all day long fifty-two to seventy-five days a year. A power washer will do its work as well as a binder or any other machine.

Old sheets which have been "turned" and can no longer be used as sheets may still prove useful if made into bags for hanging away winter clothing.

Economy does not necessarily mean spending a small amount, but in getting the largest return for the money expended.

"Autumn in the Flower Garden" is the title, but it's of interest in the spring. Ask for F. 128 of the state college at Ithaca, N. Y.

Don't think of dandelions as greens only. The tender young leaves are delicious eaten like lettuce with vinegar or salad dressing. If you are skeptical, just try them.

JUDGE PETERS PUDDING.—¾ box gelatin, 2 oranges, 2 lemons, 2 bananas, 6 figs, 10 English walnuts. Dissolve the gelatin in ½ pint cold water, add ½ pint boiling water, lemon juice, 2 cupfuls powdered sugar. Strain and let stand until it begins to thicken. Stir in the fruit, which has been cut in small pieces; turn in molds. Serve with cream.

SUNNY SLOPES

By Ethel Hueston

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Author of Prudence of the Parsonage, etc.

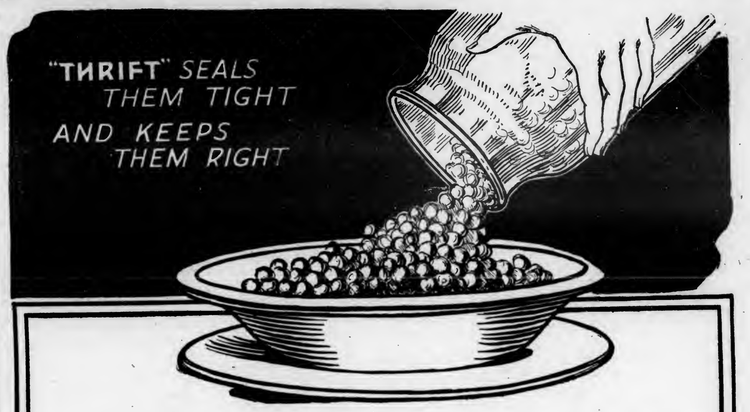
CHAPTER XVIII—Continued

Carol twisted her hands together, wringing her gloves into a shred. She moistened her dry lips, and blinked desparately to crowd away those tears. Yes, it was Connie, the little baby sister she used to tease so mercilessly, and Julia, the little rosebud baby she had wanted so many nights. She could not bear to let those ugly tears dim her sight for one minute; she dare not miss one second of that feast to her hungering eyes.

The two sisters, who had not seen each other for nearly four years, looked into each other's faces, Carol's so pleadingly hungry for the vision of one of her own, Connie's so strongly sweet and reassuring. Instinctively the others drew away, and the little group, the red-capped attendant trailing in the rear, stood alone.

"Julia, this is your mama," said Connie, and the wide blue eyes were

(Continued on page 168)



How Many "Spoiled" Last Year?

HOW many of the jars of vegetables and fruits that you "put up" last year *spoiled?*

Canning experts state that for every dozen jars packed, processed and sealed the ordinary way, *two are lost.*

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The Thrift Way is easier and quicker, too. No uncertain tops or rubber rings to bother with; no hot jars to handle.

Plan to can this season the Thrift Way. Ask your dealer for the Thrift Jars, Caps and Sealer. If not in stock, show him this advertisement; or write us direct for free booklet, ***"The Thrift Way Makes Canning Pay."*** Contains prices, canning chart, testimonials and valuable information on canning.

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Penna. Steer Feeding Experiments

W. H. TOMHAVE

The steer feeding experiments at the Pennsylvania State College closed April 6th. On April 8th, the annual cattle feeders' meeting was held, and the results of the experiments discussed. The cattle were appraised by Mr. James Denholm, a Pittsburgh packer, and were grade Shorthorns and Herefords purchased on the Chicago market late in October. The initial cost of the cattle at the feed lot at the beginning of the experiment was $11.45 per hundredweight. Five lots of twelve steers each were used to compare the value of corn silage without corn during the entire feeding period, and corn silage supplemented with ear or shelled corn for the entire or a part of the feeding period. Cottonseed meal or linseed oil meal were used as protein supplements.

Lot I received an average daily ration of 33.54 lbs. corn silage, 1.8 lbs. mixed hay (the first 23 days), 0.7 lbs. corn stover (the last 17 days), 12.5 lbs. broken ear corn (first 84 days), 12 lbs. shelled corn (last 56 days), and 2.88 lbs. cottonseed meal. This lot made an average daily gain of 2.02 lbs. The cost of making 100 lbs. gain being $27.14. They were appraised at $11.75 per cwt. in the lot at the end of the feeding period, and lost $40.94 per head.

Lot II received an average daily allowance of 48.49 lbs. corn silage, 2.37 lbs. mixed hay (first 23 days), 0.83 lbs. corn stover (last 117 days), 9.98 lbs. shelled corn (last 56 days), and 2.88 lbs. cottonseed meal. The cattle in this lot made an average gain of two pounds per day. The final appraised value in this lot was $11.50, resulting in a loss of $32.50 per head. The cost of gain was $23.20 per hundredweight.

Lot III received daily 50.41 lbs. corn silage, 2.53 mixed hay (first 23 days), 0.88 lbs. corn stover (last 117 days), 9.98 lbs. of shelled corn (last 56 days), and 3.08 lbs. linseed meal. The average daily gain per steer was 2.27 lbs. at a cost of $21.15 per cwt. The final appraised value was $12.25 per cwt., the loss being $21.40 per head.

Lot IV received a daily ration of 57.18 lbs. corn silage, 2.41 lbs. mixed hay (23 days), 0.85 lbs. corn stover (last 117 days), and 2.88 lbs. cottonseed meal. These steers made a daily gain of 1.93 lbs. The final appraised value was $11.50 per cwt. The cost of gains being $21.22 per cwt., this resulting in a loss of $26.00 per head.

Lot V received a daily 57.23 silage, 2.9 lbs. mixed hay (23 days), 0.94 lbs. corn stover (117 days), and 3.08 lbs. linseed meal. This lot made an average daily gain of 1.95 lbs. at a cost of $21.05 per cwt. The final appraised value was $11.75 per cwt., with a loss of $23.20 per head.

From this data it is seen that a heavy loss was incurred with all lots. The heaviest loss was with lot I, receiving a full corn ration during the entire feeding period. Lots I, II, and IV received the same roughage and protein supplement, and the loss per steer was in direct proportion to the amount of corn allowed. Lot III and V received linseed oil meal as a protein supplement, and showed a smaller loss than Lots II and IV, which received the same ration except that they were fed cottonseed meal as a protein supplement.

More Corn Roughage for the Cows

The feeding value of corn silage, corn fodder, and corn stover in the dairy ration is not sufficiently appreciated, especially in those regions where legumes do not thrive, recently said a specialist of the Dairy Division, United States Department of Agriculture. A study of records from cow-testing associations points to the conclusion that the growing of more corn roughage and less non-leguminous hay would increase the profitableness of the ration.

In all sections where legumes thrive it is, of course, advisable to grow them, as their value is well recognized for feeding dairy cattle. In fact, from a study of cow-testing association reports it would seem that even grain does not fully take the place of good legume roughage. It is in those sections where legumes do not thrive, however, that dairymen may well consider the growing of more corn roughage and less non-legume hay.

Few plants apparently contain all the substances required to nourish properly the animal body, but in the light of present knowledge, the corn plant seems to be one of these. It is possible to balance a ration from corn products only that will enable the animals to thrive and reproduce with apparently no ill effects. This is not the case with many other crops. Corn, then, has unusual feeding properties.

Experimental work done at the South Carolina and Pennsylvania stations has shown that it is practical under some conditions to feed dairy cows on a ration of corn silage and grain without hay. Such a ration has been used successfully in feeding beef steers. Reports from one cow-testing association in a non-leguminous hay region having an unusually high income over cost of feed and large production per cow is in a district where the dairymen have practically discontinued the feeding of hay, but instead feed silage and corn fodder. In this association the grain ration is also composed largely of corn by-products.

No matter what other conclusions may be drawn from the evidence available showing the value of corn fodder and corn silage as dairy feeds, it seems certain that the corn plant provides an excellent roughage.

Hay is often damaged very much by becoming overripe. Storms damage it seriously. The feeding value of corn is not damaged by its becoming mature, and if it is properly shocked storms do little damage to it.

There are undoubtedly many dairymen who can well consider the wisdom of reducing the amount of non-leguminous hay produced, of increasing their pasture, and of growing more leguminous feed, corn fodder, and silage to feed their dairy cows.

During the war the farmers planted wheat; the world needed bread. Now is the time to get back to clover; the land needs clover.

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Men in the Navy come home with the kind of experiences that most chaps read of only in the books.

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*32x3½	8.00	2.20	35x4½	11.50	2.90
31x4	9.00	2.40	36x4½	12.00	3.00
32x4	9.25	2.45	35x5	12.75	3.20
33x4	9.50	2.50	37x5	13.25	3.30

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Recent New York Milk Developments

M. G. FEINT

It seems likely that at least one of the big milk distributing companies has brought public wrath upon itself, and probably prosecution.

Last month Fair Price Commissioner James B. Stafford, of Buffalo, found the following notice posted on the doors of up state milk receiving plants, addressed to dairymen:

"The export market of milk products has entirely stopped. It is therefore necessary that we restrict our purchase of milk. Under no circumstances can any creamery take on an additional dairy without first getting permission from this office. This permission will not be granted for new dairies until conditions change. All dairymen are urged not to increase their production of milk, but if possible to decrease it."

It is now announced that the Lever act, known as the food control law, will be given a thorough test with respect to this order issued by Sheffield Farms Company to farmers.

Health Commissioner Copeland joins District Attorney Swann of New York in saying that the results of investigations into the milk situation thus far "show that a good case for prosecution under the Lever act has been made out."

Henry A. Guiler, special assistant United States attorney, is now in charge of the milk investigation in New York and announces that his chief has instructed him to "go right through with it."

District Attorney Swann has consulted with Dairymen's League officials regarding his plan to have the city undersell the "milk trust" by purchasing from up state farmers their daily surplus which the distributors refuse to buy.

The farmers are faced with an enormous surplus brought about by the stand taken by the Sheffield Farms Company which is reflected all over the state. Creameries, factories, and shipping stations shut down in numbers April 1st, and farmers will be at immense loss unless something can be done promptly.

R. D. Cooper, president of the league says that league members may agree to deliver milk to certain trains at 7½ cents a quart if the city will assume charge of the shipments at the terminals. Their surplus will amount to 2,500,000 quarts a day. The price named is practically that now paid by distributors.

Mr. Swann asserts that if the city will advance $20,000 for the purchase of 10,000 milk containers the surplus could be sold at the city's 510 public schools at 12 cents a quart. The distributors now own 90 per cent. of the milk cans now in use. Farmers would be put to great inconvenience and expense to buy enough cans, and they would have to buy, rent or build shipping stations.

With the proven profits in condensed milk last year at 157 per cent., and of powdered milk at 176½ per cent., and with the principal milk distributing company shown to have cleared 51 per cent. profit on liquid milk in New York last year, it would seem that the high-handed methods of the "milk trust" had about reached a climax. The switchmen's strike greatly aggravated matters, as it was very difficult to get cans back to receiving stations. Milk was handled better than most things though.

The league has proposed to open a chain of retail stores this summer for the sale of milk. The officials of the league are actually getting into efficient operation practical milk plants that are proving of great service to farmers.

The new Auburn co-operative association is equipped with the finest modern machinery, and is now handling 150,000 pounds of milk a day. The two biggest milk shipping plants of Yates county have just merged their interests with the Auburn plant, and they are sending 40,000 pounds per day.

The two new powdered milk machines are running on a 24-hour schedule. Much cream is being accepted and made into butter which is sold under the league brand. Much more milk will be accepted in a few days, when the new churns are installed. Considerable butter is sold by parcel post.

With the first thaw the Onondaga county dairymen put 40 to 50 men at work on their new plant, which they expect to have ready for use July 1st. The dairymen of the Mohawk valley are making similar plans, and also in Clinton and Essex counties.

W. W. Hovey, the man in charge of the co-operative work of the league is probably the most practical milk expert of the East, and he knows how to sell milk and its by-products.

During 1919 the business increased ten times, or $2,250,000 worth was sold. By the end of another year at this rate a thirty million dollar business will be done by the league, according to the present outlook. The January business was at the rate of three millions a year.

This seems to be the only hope of the farmers at the present time, and of the consumers too, as it is very evident that nothing can ever be expected of the milk trust but the old methods and constantly increasing retail prices.

It is to be greatly hoped that consumers can recognize their salvation in the farmers' activities, and that they will throttle their representative's efforts to injure farmers and put the milk industry hopelessly out of business.

There never was a time when farmers felt more discouraged about the milk business, only for the hope the league holds out. They are getting the heavy spring flow of milk and they are turned away from the milk receiving stations by the notices mentioned, which will exclude all spring and summer dairies. Every day adds to the list of closed stations.

Cortland county dairymen were recently astounded at the news of the Ekenburg Milk Products Company's going into the hands of the receivers. It is too true, though the company's assets are more than their liabilities. Farmers had big checks back and it remains to be seen whether these will be a total loss or not. This company had been regarded as one of the most stable. Its trade was largely export and the unprecedented exchange rates hit them hard. Their products went largely into prepared flours, etc.

Assemblyman D. P. Witter has introduced a bill asking that all milk or whey put out by factories for feeding calves and swine be sterilized as a prevention against the spread of tuberculosis in animals.

Franklin county is taking a live stock census. It is thought that results will show that this big dairy center has many less dairy animals than a year ago. These results will be shown at a big live stock and dairy show in Malone, April 28, 29 and 30.

There was a storm of protest from farmers against the low April price of milk. As finally agreed upon by the league and the dealers there was a drop of $0.017 per quart or $2.55 per 100 lbs. of milk testing 3 per cent. butter fat, all the milk to be taken. The dealers at first would offer but $2.24, or 56 cents less than a year ago, and $1.00 less than cost. The price agreed upon is 25 cents less than was paid a year ago, while the cost of feed and labor is much higher.

There is some criticism of the league officials for compromising on this basis, also for not spending more money on general advertising of the use of milk as a food, as one means of increasing consumption.

But on the whole the league is proving its value. For the past three months the league has secured for the eastern dairymen from 29 cents to 66 cents per 100 pounds more than Chicago dairymen secured.

Eastern dealers point at this, and demur. They also object to the long term contracts which the league hopes to bring about. Beginning May 1st the league hopes to get six months' contracts and avoid the monthly wrangles and uncertainties.

The city of Syracuse is to have a big milk show the week of May 3d. At that time the results of tea and coffee drinking in place of milk will be shown, also the good effects of the use of milk. Milk bars will be established in 12 schools of the city, and milk essays and posters will be featured in contests for the children.

Never did so many heifer calves and promising young stock go to the butchers as this spring. Despite the agreement that all the milk be taken by dealers, still many farmers are at a loss for a market. And the use of ice will be insisted upon by all dealers this year, increasing the labor and expense on the farm. *New York.*

About Time to Dip Sheep

Dipping is the only practical way to rid sheep of ticks and lice, say experienced sheep men, who further point out that lice cause sheep to pull their wool and thus injure the fleece. Bad as ticks are, lice are said to be even more dreaded. Sometimes it is even difficult to find them. If a sheep has pulled its wool badly, however, and the farmer looks closely at the skin over the spots where the wool is most disturbed, he will likely find small black specks which at first he may take for timothy seeds or chaff. As he watches them closely, however, they will move.

After the sheep has been shorn it should be dipped. The lambs also, as soon as they are of any size, may be given the same treatment. In order that the sheep may go into winter quarters in good condition and free from ticks, it is well to dip again in the fall.

Any of the well known dips are satisfactory, say the sheepmen at the New York college of agriculture, but whatever one is selected it is important to follow directions closely. Dips are of two kinds, the powder dips and the so-called coal tar dips.

Auchenbrain Toreador, a four-year-old Ayrshire sire, imported from Scotland a few weeks ago by Alta Crest Farms, Spencer, Mass., was sold March 30, 1920, to Captain A. Henry Higginson, South Lincoln, Mass., for a new world record price of $15,000. The previous record price for an Ayrshire was $9,078 paid for Hobsland Mendel, a yearling, sold at the Hobsland sale in Scotland a few weeks ago.

The income tax has given systematic bookkeeping on the farm the biggest boost it ever had.

Potatoes almost given away. Finest vegetable and flowers thrown in. Not one of our readers should miss the amazing big 20 cent bargain offered by Mr. Cook, the well-known seedsman—on page 161. Order at once and name P. F. and he will add free a package of wonderful prolific tree beans.—Adv.

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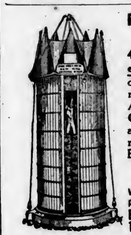

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Sunny Slopes

(Continued from page 165)

lifted wonderingly into those other wide blue eyes so like them—the mother eyes that little Julia had never known. Carol, with an inarticulate sob, dropped on her knees and gathered her baby into her arms.

Julia, who had been told it was to be a time of laughter, of rejoicing, of utter gaiety, marveled at the pain in the face of this mother, and patted away the tears with chubby hands, laughing with excitement. By the time Carol could be drawn from her wild caressing of the rosebud baby, she was practically helpless. It was Connie who marshaled them outside, tipped the red-capped attendant, waved a hand to the driver waiting across the street, directed him about the baggage, and saw to getting Carol inside and seated.

Only once Carol came back to earth: "Mercy, Connie, taxis cost a fortune out here."

"This isn't a taxi," said Connie; "it is just a car."

But Carol did not even hear her answer, for Julia, enchanted at being so lavishly enthroned in the attention of anyone, lifted her lips for another noisy kiss, and Carol was deaf to the rest of the world.

Her one idea now was to get this precious, wonderful, matchless creature home to David as quickly as possible.

"Hurry, hurry," she begged. "Make him go faster, Connie."

"He can't," said Connie, laughing. "Do you want to get us pinched for speeding, the first thing?"

And Julia, catching the word, immediately pinched both her auntie and her mama to show them she knew what they were talking about. And Carol was stricken dumb at the wonderful, unbelievable cleverness of this remarkable infant.

When the car stopped before her cottage, she forgot her manners as hostess, she forgot the baggage, and the driver, and even sister Connie. She just grabbed Julia in her arms, and rushed into the cottage, back through the kitchen to the sleeping-porch in the rear, and stood gloating over her husband.

"Look, look, look," she chanted. "It is Julia, she is ours, she is here." David sat up in bed, his breath coming quickly.

Carol, like a goddess of plenty dispensing royal favors, dumped the smiling child on the bed, and David promptly seized her.

By this time Connie had made her arrangements with the driver, and escorted herself calmly into the house, trailing the family to the porch, gently readjusting Julia, who was nearly turned upside down by the fervor of her papa and mama, and informed David that she wanted to shake hands. Thus recalled, David did shake hands, and looked pleased when she commented on how well he was looking. But in her heart, Connie, the young, untouched by sorrow, alive with the passion for work, was crying out in resentment. Big, buoyant, active David reduced to this! Carol—radiant, glowing, gleaming Carol—this subdued, gentle woman with the thin face and dark circles beneath her eyes. "Oh, it is wrong," thought Connie—though she still smiled, for hearts are marvelous creations, holding such sorrow and hiding it well.

When their wraps were removed, Julia sat on David's table, with David's hand squeezing her knees, and Carol clutching her feet, and with Connie, big and bright, sitting back and watching quietly, and telling them startling and imaginary tales of the horrors she had encountered on the train. David was entranced, and Carol was enchanted. This was their baby—this brilliant, talented, beautiful little fairy—and Carol alternately nudged David's arm and tapped his shoulder to remind him of the dignity of his fatherhood.

But in one little hour she remembered that, after all, David was her job, and even crowy, charming little Julia must not crowd him aside, and she hastened to prepare the endless eggnog. Then from the kitchen window she saw the auto, still standing before their door.

"Oh, my gracious!" she gasped. "We forgot that driver."

She got her purse and hurried outside, but the driver was gone, and only the car remained. Carol was too ignorant of motor cars to observe that it was a Harmer Six; she only wondered how on earth he could go off and forget his car. She carried the puzzle to David, and he could not solve it.

"Are you able to walk at all, David?" asked Connie.

"Yes, indeed," he said, sitting up proudly. "I can walk half a block if there are no steps to climb."

"Come out in front and we'll investigate," she suggested.

When they reached the car—and it took time, for David walked but slowly—he promptly looked at the name plate.

"Harmer Six," he read. "Why, this is Jerry's kind of car."

"Yes, it is his kind," explained Connie. "He and Prudence sent this one out for you and Carol and Julia. They have just established an agency here, and he has made arrangements with the dealer to take entire care of it for you, sending it up when you want it, calling for it when you are through, keeping it in repair and providing gas and oil—and the bill goes to Jerry in Des Moines."

One would have thought enough happiness had come to the health seekers for one day. Carol would have sworn she could not possibly be one little bit gladder than she had been before, with David sick, of course. And now came this! How David would love it! She looked at her husband, happily pottering around the engine, turning bolts and buttons, as men will do, and she looked at Julia, proudly viewing her own physical beauties in the shining body of the car, and she loked at Connie, with the charm and glory of the parsonage life clinging about her like a halo. Then she turned and walked into the house without a word. Understandingly, David and Connie allowed her to pass inside without comment.

"Connie," said David when they were alone, "I believe God will give you a whole chest of stars for your crown for the sweetness that brought you out here. Carol was sick for something of home. I wanted her to go back for a visit, but she would not leave me. But she was sick. She needed some outside life. I can give her nothing; I take my life from her. And she needed fresh inspiration, and you have brought it." David was silent a moment. "Connie, whenever things do get shadowy for us, the clouds are pulled back so we may see the sun shining on the slopes more brilliantly than ever."

Turning quickly, she followed his gaze, and a softness came into her eyes as she looked. Truly, the darkness of the canyons seemed only to emphasize the brightness of the ridges above them.

She laid her hand on David's arm, that strong, shapely, capable hand, and whispered: "David, if I might have what you and Carol have, if I could be happy in the way that you are, I think I should be willing to lose the sunshine on the slopes and dwell entirely in the darkness of the canyons. But I haven't got it; I don't know how to get it." Then she added slowly: "But I suppose, having what you two have, one could not lose the sunshine on the slopes."

CHAPTER XIX

RE-CREATION

Were you ever wakened in the early morning by the clear whistle of a meadow-lark over your head, with the rich scent of the mountain pines coming to you on the pure, light air of a new day, with the sun wrapping the earth in misty blue and staining the mountains with rose? To David, lying on his cot in the open air, every dawning morning was a new creation, a brand new promise of hope. To be sure, the enchantment was like to be broken in a moment; still the call of the morning had fired his blood and given him a new impetus—impetus not for work, not for ambition, not for activity, just an impetus to lie quietly on his cot and be happy.

The birds were shortly rivaled by the sweeter, dearer, not less heavenly voice of little Julia calling an imaginary dog, counting her mother's eyes, or singing to herself an original improviso upon the exalted subject of two brown bugs. And a moment later came the sound of rapturous kissing, and Carol was awake. And before the smile of content left his face, she stood in the doorway, her face flushed with sleep, her hair tumbling about her face, a warm bathrobe drawn about her. Always her greeting was the same:

"Good morning, David. Another glorious day, isn't it?"

Then Julia came splashing out in Aunt Connie's new rose-colored boudoir slippers, with Connie in hot barefooted pursuit. And the new day had begun, the riotous, delirious day, with Julia at the helm.

Connie had amusing merry tales to tell of her work and her friends and the family back home. And time had to be crowded a little to make room for long drives in the Harmer Six. Carol promptly learned to drive it herself, and David, tentatively at first, talked of trying his own hand on it. And finally he did, and took a boyish satisfaction in his ability to manipulate the gears. Oh, perhaps it made him a little more short of breath, and he found that his nerves were more highly keyed than in the old-time days—anyhow he came home tired, hungry, ready to sleep.

Even the occasional windy or cloudy days, when the Harmer Six was left wickedly wasting in the garage, had their attractions. How the girls did talk! Sometimes, when they had finished the dishes, Carol, intent on Connie's story, stood patiently rubbing the dishpan a hundred, a thousand times, until David would call pleadingly: "Girls, come out here and talk." Then, recalled in a flash, they rushed out to him, afraid the endless chatter would tire him, but happy that he liked to hear it.

"Speaking of lovers," Connie would begin brightly—for, like so many of the very charming girls who see no charm in matrimony, most of Connie's conversation dealt with that very subject. And it was what her auditors liked best of all to hear. Why, sometimes Carol would interrupt right in the middle of some account of her success on the papers to ask if a certain man was married, or young, or good looking. After all, getting married was the thing. And Connie was not sufficiently enthusiastic about that. Writing stories was very well, and poems and books had their place, no doubt, but Shakespeare himself never turned out a masterpiece to compare with Julia sitting, plump and happy, in the puddle of mud to the left of the kitchen door, her round pink face streaked and stained and grimy.

"I really did decide to get married once," Connie began confidentially, when they were comfortably settled on the porch by David's cot. "It was when I was in Mount Mark one time. Julia was so sweet I thought I could not possibly wait another minute. I kept thinking over the men in my mind, and finally I decided to apply my business training to the problem. Do you remember Dan Brooks?"

Carol nodded instantly. She remembered all the family beaus from the very beginning. "A doctor now, isn't he? Lives next door to the folks in Mount Mark. I used to think you would marry him, Connie. He is well off, and nice, too. And a doctor is very dignified."

Connie agreed warmly, and David laughed. All the Starrs had been so sensible in discussing the proper qualifications for lovers, and all had impulsively married whenever the heart dictated.

"Yes, that's Dan. Did you ever notice that cluster of lilac bushes outside our dining-room window? Maybe you used it in your own beau days. It is a lovely place to sit, very effective, for Dan's study overlooks it from the upstairs, and their dining-room from downstairs. So whenever I want to lure Dan I sit under the lilacs. He can't miss me.

"One day I planted myself out there with a little red note book and the telephone directory. Dan and his mother were eating luncheon. I was absorbed in my work, but just the same I had a wary eye on Dan. He shoved back his chair, and got up. Then he kissed his mother lightly, and came out the side door, whistling. I looked up, closed the directory, snapped the lock on my note book, and took the pencil out of my mouth. I said: 'Hello, Danny.' Then I shoved the books behind me.

"'Hello, Connie. No, I wouldn't invite Fred Arnold if I were you. It would just encourage him to try, try again, and it would mean an additional wound in the heart for him. Leave him out.'

"I frowned at him. 'I am not doing a party,' I said coldly.

"'No? Then why the directory? You are not reading it for amusement, are you? You are not——'

"'Never mind, Dan. It is my directory, and if I wish to look up my friends——'

"'Look up your friends!' Dan was plainly puzzled. 'None of my business, of course, but it is a queer notion. And why the tablet? Are you taking notes?' He reached for the note book with the easy familiarity that people use when they have known you all your life. I shoved it away, and flushed a little. I can flush at a second's notice, Carol. It is very effective in a crisis. I'll teach you, if you like. It only requires a little imagination."

Carol hugged her knees, and beamed at Connie. "Go on," she begged. "How did it turn out?"

"'Well,' he said, 'you must be writing a book. Are you looking up heroes? Mount Mark isn't tremendously rich in hero material. But here am I, tall, handsome, courageous.'

"I sniffed, then I smiled, then I giggled. 'Yes,' I agreed, 'I was looking up heroes, but not for a book.'

"'What for, then?'

"'For me.'

"'For you?'

"'Yes, for me. I want a hero of my own. Dan,' I said in an earnest, impressive manner, 'you may think this is very queer, and not very modest, but I need a confidant, and Aunt Grace would think I am crazy. Cross your heart you'll never tell?'

"Dan obediently crossed, and I drew out the books.

"'I am going to get married.'

"Dan pulled his long members together with a jerk, and sat up. He was speechless.

"I nodded affirmatively. 'Yes. Does it surprise you?'

"'Who to?' he demanded furiously and ungrammatically.

"'I haven't just decided,' I vouchsafed reluctantly.

"'You haven't—great Scott, are they coming around in droves like that?' He glanced down the street as if he expected to see a galaxy of admirers heaving into view. 'I knew there were a few hanging around, but there aren't many fellows in Mount Mark.'

"'No, not many, and they aren't coming in droves. I am going after them.'

"Having known me almost since my toothless days, Dan knew he could only wait.

"'I am getting pretty old, you know.'

"He looked at me critically, and gave my age a smile.

"'I am very much in favor of marriage, and families, and such things. I want one myself. And if I don't hurry up, I'll have to adopt it. There's an age limit, you know.'"

"'Age limit!' he exploded.

(To be continued)

State College Agricultural Library

THE PENNSYLVANIA STATE COLLEGE SCHOOL OF AGRICULTURE AND EXPERIMENT STATION

The Practical Farmer

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Why Not a Silo for the Coming Corn Crop?

By W. F. McSPARRAN

IF I were inclined to sermonize a bit, and had the time in these strenuous days of farming, I might do it and take the silo for my text, but the silo is such a commonplace thing to me that instead of preaching a sermon about it I might find myself wandering off into a dissertation about the foolishness of preaching.

And as a matter of fact isn't most of the preaching about agriculture, or our just plain, living-making farming, little more than foolishness? It is not the preaching that we have had—and still have—we want the practicing. So when we do run across a man who is looking up and wants to know, he does not ask us what our theory is, but rather what is our practice. He does not say "What can you tell me," but in his heart cries out to some one who is on the threshing floor of actual endeavor, "What can you show me?"

Yes, the silo is a commonplace thing to me. It seems I have always had silos. I started with some kind of one when every thing about them was entirely experimental. I have been identified with their evolution. I have had them of numerous and various kinds—but I have always had one to fill, every year since I started at filling them. I had silos before I had my wife, and my children, grown as tall and much more wise than I am, have no memories running back beyond the time of our filling silos and feeding silage.

Yet a man came to me the other day and said, "Do you have a silo now?"

"Oh, yes," I made answer, "I have always had silos."

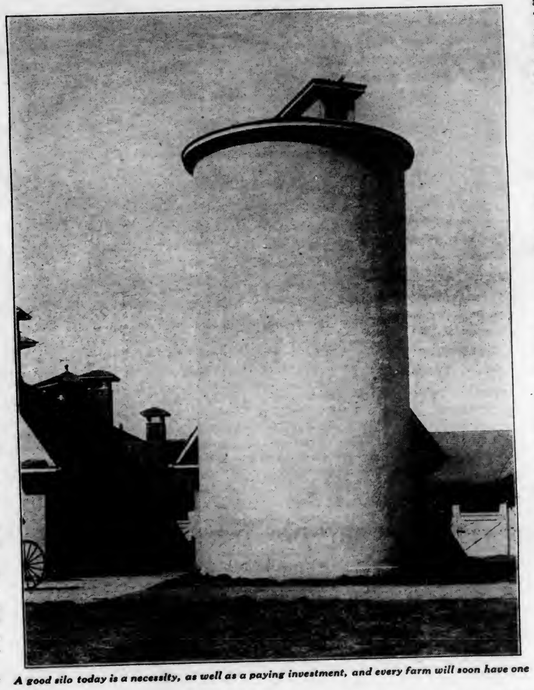
"Do you always fill your silo?"

"Certainly," I said, with such mild sarcasm as I allow myself to indulge in, "that is what I have it for. I filled silos before Bryan began running for President, and like him, have been at it ever since I began—and the end is not yet."

He is not of my faith and utterly ignored my reference to presidents, and said: "I guess the silo is the thing!"

"Sure thing," I answered; "I could not keep farming without it—and sometimes it is hard sledding up-hill, with it. Of course when we have things reorganized, and we are able to do unrestricted collective bargaining, and can eliminate the middle man, and get eight hours established as the farmers' working day, and we are able to set the prices on things we have to buy, likewise on the stuff we have to sell; and wear silk shirts and stockings, like some of the favorite sons of circumstances; and have one big union of farmers, and a new millenium comes up with the sun every morning, and a new department of agriculture studies us, and plans for us and reports on us and sits up nights for us to regulate everything for us, so that 'the cares that infest the day shall fold their tents like the Arabs and—'"

"Guess it is good for steers, too, ain't it?"



A good silo today is a necessity, as well as a paying investment, and every farm will soon have one

"What? for steers?—oh, yes, we were talking about the silo"—alas, the foolishness of preaching!

Then again, as I have done a thousand times, I had to tell that the first great claim the silo holds as a modern farm institution is in its economy, because the whole of the beautiful corn plant, which our land by its fertility and we in the sweat of our face have produced, is saved absolutely for feed—and eaten. There need be no waste of blades ripening and blowing away, no useless, long stubbles left standing in the field, no lonely, reproachful shocks of corn or fodder left standing all through the winter in the field.

Then the crop is cut and stored when the plants have reached their highest development as carriers of productive feed—even the flavor and moisture and sweetness of the growing, living plant as saved for the enjoyment, the health and the profit of the animal—and the keen satisfaction of the farmer in knowing that he has been no waster.

Further, the silo owner has harvested and stored his crop more cheaply, as regards effort and labor, than was possible for him to do by any other known method, and no farmer has done his best as a good farmer who has not tried at least to secure maximum returns from minimum labor.

Then, again, if he be an alert farmer, and wise, not having "bitten off more than he can chew," he has his corn ground cleared in abundant season for seeding it to fall sown grain. Of course some rainbow chaser who should be employed productively will come along and say the farmer must not take so much interest in full production, for if he does we can never control prices; but the wise farmer is playing for what is on the board, and he has a feeling that his first business is to grow crops and save them, then feed or otherwise dispose of them as best he can.

Now, the farmer has not only saved all the feeding value that nature elaborated in his corn crop but by converting it into silage he has added, by the processes of fermentation, to the availability of the nutritive elements of the feed; in other words, the good silage is more readily and easily digested and assimilated than even the growing corn plant was as it went into the silo. Hence we may say the good silo not

only saves all the corn crop but actually adds to its feeding value.

Finally, being practically a green feed, retaining the desirable and health-giving qualities of the green plant, it is a conservator of animal health during the long season of winter feeding. Unquestionably, also, the succulence of silage while contributing to the health and thriftiness of the animals eating it, helps recover from the dry feeds supplementing the silage their fullest feeding contents—more, indeed, than the most scientific mixing and balancing would enable us to recover or utilize. *Penna.*

Keeping Up Red Clover

CHARLES H. CHESLEY

NOT long ago, in the course of a conversation with a neighbor, he said "Oh, I can't get a catch of clover on my farm now, but I used to raise two crops a season." That expresses the experience of a great many farmers in the Eastern states. What is the reason? Some years ago the writer visited a new farming section, that is, a section recently cleared up. Asked what struck him most forcibly about the farming, he replied "The luxuriant growth of red clover." In most Northern sections this is true, red clover makes a great growth where the forests are newly cleared. This indicates that, as the farm is worked, some element necessary to the growth of the clover becomes depleted.

Clover is not necessarily a cure-all for farming troubles, but it is the basis of all dairy and stock farming throughout the country. Red clover seems to be better adapted to the needs of the Eastern states than alfalfa or any of the other legumes. To grow it successfully the land must be well supplied with humus, as is the case when land is newly cleared. Liming is also necessary in many sections. Soil that does not produce a good crop of clover after the land has been well manured with stable manure should be tested for acidity. Drainage may, also, have something to do with the difficulty of getting a good stand. Rolling, well-drained soil is best for red clover. For the flat clay soils Alsike should be substituted. It is also true that the latter variety may be grown on soil that has become too acid for the red. The failure of clover on a certain farm is but the forerunner of failures with corn, potatoes, oats and wheat, if measures are not taken to remedy the condition.

We were particularly impressed last summer with the stand of ordinary red clover upon a farm that has been cultivated for something like a hundred years. Liming has been resorted to but once, and that but a few years ago, but a considerable dairy herd has been kept for many years. Red clover is one of the most powerful allies of the Eastern farmer and we must not allow it to deteriorate and die out.

The roots of red clover penetrate the soil to a depth of five or six feet and bring up valuable fertilizing elements, hence the soil that has become worn out for clover production is in pretty bad condition. On the dairy farm, there is little need for this condition to come about. The application of barnyard manure adds the necessary humus and if occasional liming is necessary, it should be done. Insects and fungus diseases occasionally play a considerable part in the decline of clover. Cutting at the proper time will aid in checking this trouble.

A Glimpse of Germany

ROBT. W. BALDERSTON

PERHAPS some of you will want to know about the country that soldier boys of the U. S. A. are policing along the Rhine. Coblenz is the headquarters and it extends in all directions about twenty miles, except to the westward it reaches all the way to the border of France. The fertile soil in the Rhine valley, where it is broad enough, is used largely for truck growing, and the hilly lands which lead away on every side are planted to fruit or grow rye, oats, hay and potatoes. The vineyards that we all think of in connection with the Rhine seem to be on the steep slopes of the hillsides.

As is usual over Europe, hand labor is relied upon very largely in all agriculture, but the vineyards employ nothing but hand workers—largely women The ground has often been terraced by quarrying out the rocks and building walls against which the very shallow soil lodges. It gives the hillsides the appearance of being covered with huge steps. The vines are trained to stakes and pruned short Every district is famous for its wine and the different kinds are known by the locality in which the wine grapes are grown.

Our American farmers would do well to copy one very important part of German farm practice—thorough preparation of the seedbed, though we would not want to do it as these Rhine farmers do, by plowing twice—fall and spring, and then harrowing with one horse or cow. The quiet animal is often led by a boy or girl, while the man holds the plow or harrow steady, and another man follows around with a shovel and rake to see that nothing is missed. Surely labor is abundant!

American army mules, of which some thousands were sold here last year, are a new proposition to the German and this combination does not always work out. The German's propensity to have a loud cracking whip doesn't always suit Mr. Mule, and I have seen many amusing incidents on the city streets where teams get held up because no army muleskinner was there to understand his peculiar temperament. The mule is not yet as popular here as his humble half-brother, the meek but obstinate donkey.

The streets of Coblenz were laid out when people mostly walked—a few had riding horses or on occasion a carriage—and there were some slow-moving wagons. Now the 7-ton army trucks of Uncle Sam go thundering along them, guided by expert chauffeurs in khaki and followed by rattling Fords from the Y. M. C. A., sedate Cadillacs of the officers or noisy motorcycles of the dispatch riders, and the problem for a poor pedestrian is to find a chance to get along at all without being covered with mud from a passing car or being crowded into doorways as they meet. Coblenz is a thriving town now with all the gloss of the new world and its hustle and bustle rubbed over the quaintness of the olden time and somehow it does not seem to fit it very well. It is a strange mixture one finds here—a shoe shining parlor, something new to Germany, an ice cream parlor—with the American sign, too, but no cream in the "ice"—American tobacco, chewing tobacco and an American movie with American reels. But alongside are the old German frizeur salon—a far cry from our shaving parlor, the German beer garden—same spot—same tables likely for four hundred years, and the same German grocery store that sold sauerkraut to the great grandfather of the little boy who is handing over his pfennings for some to take home now. It's a strange life one leads here amid such surroundings.

Coblenz, April 6, 1920.

The American Library Association plans to carry books to readers who cannot get to the books. See opposite page

A Raspberry Experience

J. A. MARTIN

I HAVE cultivated a patch of about half an acre of red raspberries the last three years. I find them comparatively easy of culture, prolific bearers and very easy to sell. Their greatest drawback is their perishability. I am convinced that the blacks hold up in condition for a top market at least twenty-four hours longer than the reds. This, however, is no great difficulty with me as I sell on an established route and have orders for mine placed in advance. I begin picking as soon as the berries will part easily from the stem, not waiting until I can get a full pick, and pick them as late in the afternoon as I can and get through before night; then take them away early next morning. If I had to ship I would raise blacks.

We cannot get help; my wife and I all but slept in the berry field for three weeks last season. Children do not make satisfactory pickers. The fruit stems break like icicles and whole bunches of the green ones come off with one ripe berry unless they are coaxed instead of yanked off. Youngsters always try to pick pinks instead of reds, wasting your future pick.

A long rain on them while turning, sometimes even a very humid afternoon will cause wilt, while a heavy wind will shatter them down like hail. The only remedy is so to gauge your planting that you can cover it every other day. When compelled to hold over picked fruit I pour from one box into another, freshening them.

The reds bear longer than the blacks and bring a higher price, averaging here last year twenty-five cents for blacks and thirty cents a box for reds.

West Virginia.

On account of the large quantity of honey now being consumed by bakers and confectioners, there is a distinct shortage of this sweet with a resulting high price. Beekeepers are inclined to admit that the bees have not demanded higher wages, but insist that it does cost more to house, feed, and care for them than it did a few years ago. However, they declare that caring for bees is relatively easy work in that it does not require heavy labor, that the work may be done by elderly men and by women. Conditions in many places are suitable for beekeeping, and the production of honey may be increased several fold at a relatively low cost. Honey is always a pleasing substitute for sugar.

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MAY 15, 1920

Agriculture Gets a Hearing

BREAKING away from precedence, the United States Chamber of Commerce at its annual meeting a few days ago in Atlantic City, for the first time in its history gave agriculture a place on its program. The four thousand members of the Chamber, who attended from all parts of this country, represented the business interests of the nation and they spent four days considering their problems. At one of the evening meetings the secretary of agriculture, E. T. Meredith, and the president of the American Farm Bureau Federation, J. R. Howard, were on the program to speak respectively on "The Government's Part and The Farmer's Part." Fortunately, or unfortunately, Sir Auckland Geddes, the new ambassador from Great Britain, made his first public address before the convention that evening, which crowded the hall to capacity, and Mr. Meredith did not appear until the fourth speaker and Mr. Howard the fifth and last. This meant that a large part of the audience did not hear these two vital addresses and still have no first-hand knowledge of the condition in which American agriculture, scientific and practical, now finds itself. The secretary of agriculture made a wonderful speech on behalf of his department, but was more than fair in pointing out that it was really the nation's department and the business men who were enticing from it by increased salaries the men who had given it their best study were really, by a slow but sure process, cutting their own throats. Mr. Meredith deplored and cited numerous examples of the insufficient salaries paid by the department and tried to show how one failure or inefficient official did not represent its entire workings or the good it has accomplished. He drove home several truths of the present conditions on the farm, but courteously left to Mr. Howard the part expected of him. We cannot expect to retain five thousand dollar men for two thousand dollar salaries and in our opinion the secretary's speech appealed to the men he addressed because he placed it upon a purely business basis and without doubt it will react favorably if not quickly for the advancement of agriculture. Mr. Howard presented without varnish the conditions farmers have to face today and spoke for an agricultural policy which will enable them to continue in business and place this country in an independent world position where every class has equal opportunity. Both men gave agriculture in this country a boost which it has needed for a long time before the eyes of big business. Proper publicity has long been one of the great needs of our greatest industry, but as the units are becoming more and more organized facts are being presented to the public which in time cannot help winning for the cause, although, because of the late start, it might seem at times as if the effort was useless.

A Solution for the Labor Problem

AFTER reading the newspaper reports of a decreased winter wheat acreage, farm population and male immigration coupled with reduced crops, increased public sales and diminishing dairy herds, a city gentleman out in Ohio is getting scared about what he is going to have to eat and writes to his favorite evening daily paper with a plan to prevent such an unfortunate condition continuing. An editor's note at the beginning of the article clearly states that the paper assumes no responsibility for the opinions expressed, so the gentleman has to plead his own case. Here are the exact words he uses. "The writer is a pronounced optimist, but finds little cheer in above facts. If farmer competes with industrial wages of $8 and $10 daily, skyrocketing will go food prices; if he does not obtain labor 'food famine' prices inevitable. I suggest following general plan as remedy, limited space forbidding details. Use the convicts of counties, states and federal government for farm labor, placing the present farm help as bosses and instructors of the convicts. Give farmers privilege obtaining convict labor at low wage rate to cover actual expense of guards, transportation and perhaps slight stipend to convict (or reduced time of sentence) for extra effort. If vacant houses in farming districts not ample, house convicts in tents or temporary sheds or transport daily in trucks from prison where distance allows. Time is essence of feasibility in above plan. Red tape should be slashed to minimum. Days count. Quick efficiency needed to combat alarming emergency becoming daily more serious." It would be useless to attempt to answer such an absurd argument here, farmers know the answer and the people who read the plan and possibly applauded it would never see our reply. But whither are we drifting when city papers even print such stuff, even if they don't endorse it. Farmers are asked to buy, in fact are compelled to buy, goods produced from the eight and ten dollar industrial wages, so why should we use convicts to make cheap food? One county, to our knowledge, during the war rented farms and worked the prisoners on them, producing large amounts of food stuffs at practically no cost. When it came time to sell the produce they actually underbid farmers with the same kind of goods, who had to make a profit to pay among other things the county taxes to keep the prisoners. Why not put the prisoners in the industrial plants? But we are starting what we said we would not do, so think it out for yourself.

Books for Everybody

THE American Library Association, consisting of four thousand librarians in the United States, has launched a campaign with the idea of making available books for everybody. Of course, it does not expect to do this all at once, but with a fund of $2,000,000 in the next three years it has high hopes of materially increasing the reading of good books throughout the nation. The money is to be raised through the established libraries and spent in ways their experience has shown them it will do the most good. Country people will benefit by the establishment, in certain sections, of traveling libraries, which have already proved their usefulness, and the upbuilding of local libraries. Recent figures have shown that 2170 out of the approximately three thousand counties in the United States do not have a public library of five thousand volumes or more. A lamentable fact when we stop to realize the value of books in creating a high type of citizenship. An efficient library, often referred to as the people's university, can be a big help in giving us a clear thinking, intelligent population and overcome much of the unrest and propaganda which is appearing on all sides to weaken our national life. That people will read if given the chance was proven during the war when more than seven million books were supplied to the soldiers by the American Library Association and eagerly read. Immigrants coming to find a home here ought to be able to read in their own tongue our ideals and traditions; workers ought to have technical books; the blind are entitled to more books in their Braille type, so the association has plenty of opportunities to carry on its work and with sufficient funds ought to be able to make a considerable showing in the reading habits of the people.

Starting to Save at the Wrong Place

UNCLE SAM has realized that he has to start cutting down expenses and he is to be commended, but sometimes it seems as if he began at the wrong end. One of the latest things to be classed as something we can do without is the Journal of Agricultural Research, published by the Department of Agriculture. It is said that the appropriation for this technical publication is only $20,000, but still the Senate and House committees on printing are considering the advisability of "saving" this amount for another use. This journal is seldom seen by the general reader as it is the medium through which scientific, experimental and research work of the different colleges is disseminated to those working along these lines. While it is a scientific publication, not only the farmer, but the nation, is vitally interested in its continuance. Farmers today could no more get along without the scientists than our forefathers could do without the ax to clear the original forests. Every year we have new and difficult problems and pests to meet, besides the old ones, which always clamor for a solution. If Congress sees fit to stop the very fountainhead of this work it will not be long before its effect will be felt all along the line by those who are dependent on agriculture, and that means all of us.

A Good Drive for Good Roads

FOLLOWING one of our war-learned lessons of having special days set aside for drives to vividly bring things to public attention, May 17 to 22 has been set apart as "National Ship by Truck—Good Roads Week." Every possible agency has been enlisted to boost these two modern ideas during this period. Even the clergymen of every denomination have had called to their attention the "relation between good roads and right living and good roads and Christian progress," with the request that May 16 be known as Good Roads Sunday. For city people it doesn't matter much how the roads are when they want to go to church, but in the country it is different. There is a direct relation between roads and church attendance, so that everything we can do to improve the one will affect the other, thus making the road problem not only a business matter, but a social and religious necessity.

Bulletin Helps for Farmers

The New Jersey Experiment Station has just issued new four-page spraying circulars for peaches, cherries, plums, pears, apples and quinces. These supersede earlier circulars on the same subjects and give the latest ideas on this subject for New Jersey conditions. A copy of any of them may be obtained by addressing the Extension Department, New Brunswick, New Jersey.

In these days when feeding costs are so high it pays to feed intelligently, and a careful reading of Farmers' Bulletin 743, "The Feeding of Dairy Cows," will be time well spent. This 28-page bulletin just received is a revision of one issued a few years ago and brings the subject right up to date.

The foregoing farmers' bulletin may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

Success with Soy Beans and Cow Peas

JOHN DAY

Timeliness in planting soy beans and cow peas for hay, so that the roughage will mature and be ready for harvest while the sun is still strong and powerful, so as to wilt the green stuff expeditiously and in order to favor crop harvest before the equinoctial rains of autumn occur, is a fundamental factor in the success of the crop. The writer prefers soy beans to cowpeas for hay making because the beans are relatively frost resistant as compared with cow peas, which succumb to the first touches of cold weather. Beans can be planted several weeks earlier than peas in the spring, while they usually can stand in the field before being harvested a correspondingly longer period in the fall.

I plant soy beans generally the same time as I plant corn, about the second week in May. The average popular varieties of beans require from 90 to 100 days to mature a good crop of hay. The beans are ripe and ready to cut when about one-third of the pods have turned straw color and the beans rattle in their pods. I cut the beans as early in the morning as the dew is off the hay, so that the roughage can wilt in the swath, and towards the end of the afternoon the hay may be raked into windrows, and the next day cocked up in small shocks containing about 150 pounds apiece. I never cock up the hay until it is thoroughly dry so that it rattles when handled on a fork. I make my cocks very steep, and top them off well so that they will shed water, and dress down the sides in good shape.

I have found it difficult to cure soy bean hay when grown alone, due to the fact that this material in the cock will soak up rain like a sponge, if the weather is inclement during the hay harvest season. The same is also true of cow pea hay, another disadvantage of growing cow peas for hay being that the vining nature of the plants makes mowing difficult. The writer always likes to grow soy beans or cow peas in combination with sorghum, about five or six pecks of the leguminous crop to one peck of sorghum per acre sown broadcast in a grain drill. The sorghum makes a dense, rank growth, which enables the grower to make better cocks which will be more resistant to bad weather. Furthermore, this combination generally makes a larger yield of hay than do either the beans or peas when grown alone.

If soy bean and sorghum hay is stored in the mow in a well-cured condition there is little danger of spontaneous combustion or fire fanging developing. However, if the green stuff is not properly wilted and cured it is liable to heat and spoil. The writer makes a practice of sprinkling several handfuls of salt over each load of hay as it is stored in the mow, while in case the roughage is not well cured, he sometimes places alternate layers of straw and hay in the mow, so that the dry straw will absorb some of the surplus moisture of the hay and prevent heating. Furthermore, using the straw in this manner increases its palatability and makes the live stock relish the material more highly.

The writer always places a large canvas in the frame of each hay wagon which he uses to haul bean and sorghum hay, in order to prevent the waste and loss of the beans which shatter in handling the hay onto and off of the wagons. The hay is usually so heavy and rank that it cannot be handled on a hay loader, although where the soy beans or cow peas are grown alone the hay loader can be employed. Two wagons are used, and either two teams of horses or an automobile or truck are used to haul the hay wagons to the barn.

Some recommend cocking soy bean or cow pea hay up on racks in order to cure it. It takes lots of time to handle the hay on these racks, and this is another reason why the writer grows the crop with sorghum, as the dense growth of cane aids in making better and more substantial weather-resistant cocks. In all cases if the hay gets wet in the windrow or swath, it should be tedded or else turned over with forks by hand so that it will dry out again. Extra work in this regard often will save hay which otherwise will deteriorate, due to the water damage. Haying is a farm job, like most others, which will end well if it is begun well and continued well up to the time of completion. *Virginia.*

Experiences with Landlords

DANIEL PROWANT

Go with me on a day's journey by auto into any part of the country, even if I am not familiar with local conditions there, and I can point out in nearly every case the farm that is owned and operated by the same person, and the one that is operated by the tenant. This does not require any mind reading, second sight, nor any other supernatural powers, for in nearly every case the mark of the tenant farmer is as plain as if the farm was lettered so that everyone passing can read this message, "The owner does not reside here." This subject is often brought up in the pages of the agricultural press, and in most cases we read of the careless and ignorant tenant, who is interested in getting only a living for himself for a period of one year on the farm he is operating, and cares nothing whatever if he leaves the farm at the end of the year in such condition that the next tenant cannot put it on a profit-paying basis.

The first sign I can show the visitor of the fact that the owner of the farm is a non-resident is the unkept roadside, the fences falling into decay, and the fence row overgrown with weeds and brush. Another unfailing sign is the absence of paint on the farm buildings, most of which age and decay very rapidly under the tenant farmer's care. Another sign is the weed-grown and uncared for lawn, a muddy and neglected barnlot, barn doors off the track, and many other like matters too numerous to mention. During the growing season the crops on those farms also show how the farm is being managed, as in very few cases is there any new fertility added to the soil, and of course such land cannot produce crops with adjoining land where every effort has been made to keep the soil in a high state of fertility. During rainy seasons such farms are often flooded with water long after other fields are dry enough for cultivation, owing to the lack of proper drainage. The most common question will be: "Why do not these tenants do something to overcome these troubles, and produce good crops instead of poor ones." This is what I shall endeavor to explain as I go on.

In order to get a clear idea of the tenant's viewpoint of the matter, let us first consider why it is that the owner of the farm is a non-resident. In some cases advancing age or ill health has compelled the owner to abandon the farm and seek lighter work or else retire from active work altogether. It has been my experience that only in rare cases are these owners difficult to please by a tenant willing to go half way. Then we have a younger class of non-resident land owners who have abandoned the farm for various reasons. These men, while they may have been fairly successful on the farm at the time of retirement, having abandoned five years or more ago when farming conditions presented quite a different problem from what they do today, are out of step with rural conditions, and have only a vague idea of the many perplexing problems besetting the tenant of this age.

In this section of the country most landlords prefer cash rental when it can be obtained. The sum demanded ranges from eight to twenty dollars per acre per year, depending mostly on the condition of the farm and the fertility of the soil. It is sometimes amusing to the tenant to see the enormous value some of these non-resident landlords place on their farms when discussing the question of cash rental with a prospective tenant. Often the only argument that can be advanced to justify the asking of high rents is the fact that an adjoining farm has been rented at the same price, the non-resident owner setting up the plea that the soil is identically the same. This may be true, but the non-resident owner fails to consider that the owner of the other farm mentioned has kept pace with rural conditions, and knows what it takes to keep a farm productive, and has kept it so regardless of expenses. He can then ask a higher rental and get it because the farm is worth more and the tenant is not taking so many chances of a crop failure. Cash rental places all the possibility of crop failures and loss

(Concluded on page 174)

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Water Supply from Hydraulic Ram

C. H. THOMAS

The question of an adequate and economical water supply for the farm is an important factor. Outside of a natural flow, the hydraulic ram is the most economical. It does not need steam or electricity to help it run, but uses the force of gravity. In installing a ram, there are certain natural laws which have to be followed, or the plant will not prove a success.

Here are the three principal factors: The proper amount of water, the proper fall of the feed pipe, and the proper length and size of the feed pipe. One ram I have in mind, which was installed about a year ago under adverse circumstances, is working successfully today. There was an elevation of some 110 feet to be overcome in a distance of about 800 feet. The owner first tried a certain make of ram without success. Then, not to be outdone, he put in another make with a feed pipe 150 feet long and three inches in diameter. With this he got about a seven-foot fall from the top of the head box to the ram, which proved to give sufficient power to the ram to overcome the resistance or weight of the 45-pound back pressure existing in the rise pipe.

In our case there was a nice spring of fresh, sparkling water that we wanted to use. We put in a ram so that we could make use of this supply. The water from this spring is brought about 300 feet through a one-inch pipe, by gravity, and enters the ram. There it receives the force of the water from the feed pipe, and is forced first into the air chamber, then into the rise pipe, and finally up to the cistern. To the novice or one not acquainted with this form of water power a ram may seem a mystery. But it is simple enough.

When a column of water in a pipe is suddenly stopped by the closing of the outlet valve in the ram, the momentum of the water opens a valve into the air chamber. A certain amount of water rushes through, and at the same instant the water rebounds in the feed pipe, letting the air chamber close and hold what had gone through. The pressure of water taken off, the outlet valve suddenly opens, and the water starts down the feed pipe again. The operation is repeated again and again, and the ram is kept pumping the water as though by perpetual motion, up the long grade to the cistern, day in and day out, with but little attention paid to it.

Occasionally a new gasket or something of that sort is needed, but that is all. The hydraulic ram is a time and money saver, and of great value to any farm where the conditions are right.

The office of the air chamber in the ram is to contain a certain amount of air. This forms a cushion when compressed by the weight of the water in the rise pipe, and exerts a spring-like action on the water, forcing it out at the cistern in a steady stream. A ram derives its name from the fact that it rams or forces part of the water that operates it to a higher level than the source of supply. Since it wastes a considerable portion of the water in securing power to elevate the remainder, there must be good drainage at the place where the ram is located.

The flow required to operate a ram is from one-half gallon per minute upward, and the ram must be at least two feet below and ten feet away from the source of supply, so as to give the water an opportunity to gain momentum. There are various standard rules for determining the best position of the ram with relation to the supply and point of delivery. The speed may also be varied to pump a larger proportion of the water when the supply is limited, or to pump it faster when there is an abundance. *Pennsylvania.*

Gasoline Engine Trouble

DANIEL PROWANT

Improper valve setting is a quite common engine trouble, and while it probably does not do the engine much harm to run it this way, the owner is not apt to do so, as it will not give any power, if it can be persuaded to start at all. It can be readily detected by the loss of power and by blue smoke being blown back through the carburetor. On a one-cylinder engine there will be found two of these valves, and in each valve there is a slot for a screwdriver. The valves are located in the cylinder head, and when they give trouble the head must be taken off and the valves ground into the setting so that they fit perfectly. To do this, secure the head in a vise or some other place where it will be held solid, smear the surface of the valve seat with valve grinding compound, and by using a screwdriver bit in the brace, valves can be ground just as well at home as in a garage or repair shop. Do not use too much pressure, and examine the valve frequently to see how much progress is being made. As soon as an unbroken bright ring can be seen entirely around the valve seat, the valve will work, even if the ring is as fine as a thread, but it is better to work until a good, well-developed ring shows, as the job will then last much longer. Before putting on the head, all parts should be carefully washed with kerosene to remove all traces of the valve grinding compound, for if any of it gets into the cylinder it will cut the walls out in a short time. *Ohio.*

Estimates show that Pennsylvania had 22,900 acres of dry or field beans in 1919. Assuming that the average yield was eleven bushels per acre and the average price four dollars per bushel, which is only reasonable and fair, the crop was worth over a million dollars. Bean production is only a side line in Pennsylvania agriculture.

Birds are good neighbors. Nest boxes should be in place for them. A bird bath for the hot days of next summer might be planned now. Publication F. 76 from the college of agriculture at Ithaca, N. Y., tells how birds aid agriculture.

A convenient way to apply lime is before or immediately after the corn crop is planted; then the lime may be worked into the soil by the successive corn cultivation.

The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5, or 6 AMERICAN Radiators and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See prices below for various sizes of outfits.

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	3-B	"	200	198
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	3-A	"	265	234
	4-A	"	330	279
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Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. EASY PAYMENTS, if desired. Outfits shipped complete f. o. b. our nearest warehouse—at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

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More Eggs from the Turkey Hens

MRS W. HARRISON HANN

As our turkey hens are beginning to lay, it is time for us to turn our thoughts to the handling, and setting of the eggs. I have found the following the most successful way I have ever tried. I gather the eggs as soon as possible after they are laid, pack them in a box with a layer of excelsior in the bottom, point end down. Packed in this way they need not be turned, and will keep in good hatching condition for at least three weeks.

The first hen that becomes broody after her laying of about 15 eggs, I never set, but shut her up for a day or two, until she has gotten over her broodiness. Usually in less than a week she begins her second laying. About the time I shut her up I set all the eggs I have, under chicken hens, all at the same time if possible. When she becomes broody after her second laying (which usually consists of about 12 eggs) I take as many eggs as she can cover (usually about 20) from the chicken hens, and set her with them. Sometimes she only has a few days to set on them until they hatch, but this is all for the better, as she does not deprive herself so long of feed, as turkey hens often do when setting, and will not eat the feed away from the little ones as she would otherwise.

I give the poults all to the turkey hen, including those that were hatched under the chickens. Young turkeys thrive better when raised with a turkey hen than with a chicken hen, and one hen can care for 35 or 40 to good advantage. In this way I can have every turkey hen lay two layings and sometimes three, and at the present price of poultry is worth considering.

Penna.

Jail the Rooster

All roosters should be penned or sold as soon as the hatching season is over, recently said E. L. Dakan, a poultry specialist at the Ohio State University. If the bird is a valuable one, he can be put in a coop. In most cases the rooster should be disposed of. Young males make better breeders than old ones and the shortest and surest path to breed improvement is to buy a high-grade cock for next season. Roosters are not necessary to egg production.

Experience with Landlords

(Concluded from page 172)

upon the tenant, the owner being safe whatever happens. It is needless to state that this does not appeal very well to the average tenant farmer.

We next have the matter of share rental, the terms and conditions of which are usually as long as the moral law. In my own case I sometimes receive one-half of all crops raised, and sometimes three-fifths, depending upon what kind of man I am dealing with, and how bad I want land. Under these conditions the tenant usually furnishes everything that is needed to farm the land, the owner being at no expense whatever. Some landlords do not expect the tenant to do an endless amount of cleaning up on the farm free of charge, while others insist upon clauses in the lease that bind the tenant to do everything that needs doing and some things that do not, as a part of the contract. These leases usually cover a period of one year only, and as the tenant has no assurance until near the close of the year whether he will farm the land the next season or not, he does not feel like making very many improvements on his own credit. Under the terms of three-fifths of the crops raised the tenant can usually make it very well, even with only fair crops the first year, but where more than this must be given it is usually an impossibility for the tenant to make more than a living unless crops happen to be unusually good, under the one-half contract where the tenant is at all expense.

Quoting a little more from my own experience, I am at present operating a farm for a man whom age has compelled to retire from active farm work. This man has spent his entire life on the farm, and at present resides on one, although he is physically incapable of farming any longer. He is still a student of agriculture, and anything in the way of drainage, fences or clover that the farm needs he is willing to furnish, as he has kept step with rural conditions and knows that it is impossible to get anything from the soil without first putting something in. On my part I do not object to keeping all weeds and brush cut along the fences, as I get this place at three-fifths share rental on long time leases, and know that I can work it as long as I care to do so. On the other hand, I am also operating an 80-acre farm on a basis of one-half share rental, and I furnish all expenses here also. I get an option of one year only on this farm, it is not as good a farm as where I get three-fifths, and the owner is a non-resident and is more physically able to engage in farm work than I am. He left the farm for the simple reason that there was more money to be made in another line of work. It is needless for me to state on which farm I do the best work.

Where is the solution of this problem? I am not at all certain that there is a cure-all for this matter in every case, for in some cases the tenant may be at fault and no amount of fair dealing would prove profitable to both landlord and tenant. I happen to know however, that under the present system of tenant farming the tenant takes such extremely long chances that it very seldom pays in the end to engage in it at the present time, considering the high prices paid for unskilled labor at other trades. A long term lease of from three to five years gives the tenant some chance to keep the farm he works in something like up-to-date condition, and both landlord and tenant are usually benefited by such a contract. Also under the present rental system the tenant is carrying practically all the risk in case of a crop failure. To make the tenant contented with his position it is either necessary for the landlord to offer something higher than one-half of all crops, as the tenant positively cannot afford to take chances of crop failures on this basis, or else operate on a partnership basis, the landlord furnishing one-half of all seed sown, thus making him carry part of the loss in case the crop fails when he expects to receive half of the crop harvested.

Ohio.

Thrift Way Is Best For Canning Clubs

BEST — because it is so much *quicker* and *easier* than old-style canning methods that members can put up more jars in less time. No hot jars, fussy tops or rubber rings to bother with the Thrift Way.

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TURKEY EGGS From our large vigorous M. Bronze, B. Red, Narragansett, White Holland, $4.00 for 6; $7.75 for 12. R. I. Rock and S. C. R. I. Reds, $2.00 for 15; $10.00 per 100. All eggs prepaid, by mail or express. Orders given prompt attention. WALTER BROS, Powhatan Pt., O.

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Buy Hummer's Famous Chicks Barred Rock, $22.00. Reds, $25.00. Ancona, $31.00. Brown Leghorn, $21.00. April and May each week. We never stop hatching. Circulars Free. E. R. HUMMER & CO., Frenchtown, N. J.

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BUFF ORPINGTONS Eggs and baby chicks from high-grade Orpingtons. Eggs, $2.50: chicks 27 cents. Columbian Rocks from 200-egg strain. Eggs, $3.00; chicks, 30 cents. JOHN EAGLE, PHOENIXVILLE, Pa.

CHICKS White Leghorns,.... $20—100; Barred Rocks..... 25—100; R. I. Reds..... 25—100; White Wyandottes, 30—100. Tappan Poultry Farm, Tappan, N. Y.

HATCHING EGGS From FREE FARM RANGE POULTRY Rocks, Reds, Wyandottes, Leghorns, Minorcas, Hamburgs, Anconas, Brahmas, Ducks, etc. Also Hares, Cavies and Holstein cattle. Catalogue free. H. A. SOUDER, Sellersville, Pa.

FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Anconas, Orpingtons, Langshans, Brahmas, Leghorns, Andalusian, turkeys, ducks, geese, guineas. Prices low. Ralph M. Raby, Loudonville, O.

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Rider Agents Wanted Everywhere to ride and exhibit the new Ranger "Motorbike" completely equipped with electric light and horn, carrier, stand, tool tank, coaster-brake, mud guards and anti-skid tires. Choice of 44 other styles, colors and sizes in the famous "Ranger" line of bicycles. DELIVERED FREE on approval and 30 DAYS TRIAL. EASY PAYMENTS if desired at a small advance over our Regular Factory-to-Rider cash prices. TIRES Lamps, Horns, Wheels, Sundries, and parts for all bicycles—at half usual prices. SEND NO MONEY but tell us exactly what you need. Do not buy until you get our prices, terms and the big FREE catalog. MEAD CYCLE COMPANY Dept. C302 CHICAGO

200,000 CHICKS Reds, Rocks, Leghorns, Minorcas and Broilers at rock bottom prices by Parcel Post, Prepaid, and safe delivery guaranteed. Our eleventh year. Catalogue Free. Keystone Hatchery, Richfield, Pa.

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90 BREEDS Poultry, eggs, baby chicks, pigeons, dogs, parrots, ferrets, Belgian Hares, bargain list free; 60-page book 20 cents. Hergey's Poultry Farm, Telford, Pa.

EGGS from thoroughbred Light Brahmas, Columbian Wyandottes, Silver Campines, Rocks, Reds; $1 per 15; $2 per 30. Leghorn, $1 per 15. No postage paid. S. G. BEALER, Coopersburg, Pa.

GOLDEN M. B. TURKEYS. Bred from extra heavy weight Toms. Barred Rock Cockerels; also Game Bantams, and Guineas. Pure Bred Shepherd Pups. Miss SUSIE WRIGHT, Vecchiale Ky.

Fine Poultry. Turkeys, Geese, Ducks, Guineas, Bantams, Pigeons, Hares, Calves, Dogs, Stock. Eggs low. Catalog. Pioneer Farm, Telford, Pa.

Keeping Automobile Upkeep Down

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1293, JUNE 15.—The corn ought to be making a good growth about this time. How is the best way to handle the crop from now on so as to get the biggest yield? What style cultivator do you find does the best work? Do you raise a special patch for seed only or select the seed from the general field? Do you detassel the barren stalks?

TOPIC No. 1294, JULY 1.—What has been your experience with paints and painting for the farm buildings? Do you use ready mixed paint or make your own with white lead and oil? What colors seem to suit best for house and barn? Any little helps you have found in doing a quicker or better job will be appreciated by someone about to beautify their property with a coat of paint.

C. C. C., Jr., Penn Laird, Va.—Experience has taught me there are many ways in which the upkeep of the automobile may be lessened. Take, for instance, repair work. I find I can do about 75 per cent. of my repair work very satisfactory with the aid of a few extra tools, the cost of which proved less than one large repair bill. In addition to the regular tools coming with car I purchased one connecting rod bearing wrench, one main bearing wrench, one set of socket wrenches, one pipe wrench, one block and tackle and an assortment of lock washers, cotter pins, gaskets, etc. With these tools I do practically all of my repair work right at home at a tremendous saving.

Experience has taught me the best tires I can buy are the cheapest and that much can be done to lengthen their life and usefulness. I keep my tires pumped up, never using the machine without testing tires for air pressure; keep oil and gasoline off them, apply brakes gradually, don't let machine stand on deflated tires, use vulcanizer promptly when needed and leave nothing undone that will preserve the life and resiliency of the rubber. My tires invariably exceed the guaranteed mileage.

That a great saving in high-priced gasoline is possible by careful driving there is no question of doubt. Why run an idle motor down numerous long grades? I cut off the spark and coast down, save my gasoline, cool the motor and save oil. Again, why run an idle motor while talking to a friend? All such things are needless waste of gasoline and oil.

I find the best oil, like the best tires, by far the cheapest in the end. Furthermore, I find it pays to buy sealed oil, for bulk oil is frequently adulterated. Despite the present high prices of gasoline, tires, repair work and automobile accessories in general, the upkeep of my car is less than heretofore, due to a determined effort to reduce expenses in every way possible.

H. H. B., Norristown, Pa.—As I have a car, I will tell you how I try to save in running. I run with the carburetor shut down as tight as it will work when warm, and still give enough power under road conditions. Thus when I am running in a hilly country I have the needle valve open a little further, while in a more level country I carry it shut down tighter. I get a trifle over 25 miles per gallon of motor fuel.

I get just about 100 miles per quart on cylinder oil. I carry the oil at all times above the upper pet cock or in other words, five quarts of oil in the crank case.

I got my car in the fall of 1916, thus far I have done all repairing myself. If one keeps his car properly oiled and greased, he will not have much trouble with the bearings. I find oftentimes they do not need adjusting for at least 20,000 to 25,000 miles.

If I am going to haul a heavy load, I test my tires. If they are down a little I pump them, on the rear to 70 pounds pressure and front to 60 pounds pressure. I find this is half the wear; if a tire isn't properly inflated the wear is too great on the side wall, and apt to make a fabric break or a pinch, which also punctures the tube.

If I have two punctured tires, a front and rear one, I cut the bead off the front tire and put it inside the rear. I put the poor place in one tire at a good place in the other. I have never bought a blowout patch. I use old tires, take the best parts of them and cut the bead off, then you have an O. K. patch.

R. A., Norwich, N. Y.—I had a five-passenger car on which I placed a delivery body and use it for light trucking. I make usually an average of forty miles a day.

When I purchased my car I had no working knowledge of the different parts whatever. After four years of experience I can safely say that the way I saved the most money was spending my time with the car in the garage while it was being overhauled. In this way I obtained knowledge first hand. I saw it taken apart a number of times. I became familiar with the different parts and their uses. After a little, when things went wrong, I knew what was the matter, and I also knew if I could fix it. If you do not know where to look for your trouble you can not remedy it, and you only add to your difficulties and expense also by trying out different things to see if it will run better. Experimenting by a green hand is usually expensive. When my car goes to the garage to be overhauled, I am there to look it over too, and if there are any parts badly worn I have them replaced then, even though they would run a little longer. The cost of the material is not great and they can be put in place in a short time, while on the other hand they might break in a few days, causing practically the same work to be done over again.

W. H. H., Needmore, Pa.—Spark-plug difficulty is one of our most common automobile troubles, yet more of this is due to neglect than long wear. A great deal of expense and unpleasant work could be avoided if we gave our spark plugs a little more attention at the proper time. Adjust them properly and you will be surprised at the good service they will give you. Examine discarded spark plugs and you will find few of them are out of use from long service. Most of them will be found damaged from neglect, such as broken porcelain, broken wire points, distorted shells, or similar indications of misuse.

The best way to clean a plug is to take it apart, scrape off all the carbon on the inside of the shell, then clean the porcelain carefully with a soft rag, dampened with kerosene; never use anything rough, as it will take the gloss off the porcelain, which will allow the mat surface to soot up more quickly.

When replacing the porcelain, press it down firmly and correctly before tightening up the stuffing gland, this will keep it in place, and prevent bending the points much in adjusting the gap.

After the plug is assembled, put a few drops of a mixture of engine oil and graphite on the threads, this will make the plugs fit tightly.

The exposed parts of the porcelain should be kept clean at all times by wiping with a clean cloth, or waste; if dirt is allowed to accumulate it will cause the spark to leak across the surface, instead of jumping the gap.

Be very careful to use the proper kind of wrench when removing plugs, as a great many are broken by using a wrench that does not fit the hexagon.

Give the world the once over

LISTEN, fellows, to some straight talk. Many a man when he gets to be 40, *misses something*. He may have lots of money, and a fine family but—

He never "got out and saw things". After he gets settled down, *it's too late.*

Every man wants to see the world. No man likes to stand still all his life. The best time to TRAVEL is when you're young and lively—right NOW!

Right NOW your Uncle Sam is calling, "Shove off!" He wants men for his Navy. He's inviting *you!* It's the biggest chance you'll ever get to give the world the once over!

The Navy goes all over the world—sails the Seven Seas—squints at the six continents—*that's its business.* You stand to see more odd sights, wonderful scenery and strange people than you ever dreamed of.

You'll work hard while you work. You'll play hard while you play. You'll earn and learn. You'll get, in addition to "shore-leave", a 30-day straight vacation—which is more than the average bank president can count on.

You can join for two years. When you get through you'll be physically and mentally "tuned up" for the rest of your life. You'll be ready through and through for SUCCESS.

There's a Recruiting Station right near you. If you don't know where it is, your Postmaster will be glad to tell you.

Shove off!-Join the U. S. Navy

A Good Used Car Come to the Roman

The Roman guarantee the lowest prices in the country for a good, first-class, reliable, used car. You get here what you want and when you buy from us you are sure that the car you get is right.

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It is full of valuable information for the man who expects to buy a car and wants to save real money.

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Tires $5.50 Shipped direct to you with money back guarantee

We could not give you a better tire if we charged you double the price. Morgan Double Fabric Tires 30x3 size, at $5.50 are practical, economical and substantial. Our method of rebuilding is the recognized standard adopted in all high-class rubber works.

Morgan Tires are made in all sizes and sold direct to car owners at a big saving. Guaranteed 5000 Miles. We stand back of every tire we sell. Every size a bargain—all sizes listed below we have in stock ready for shipment.

Size	Tires	Tubes	Size	Tires	Tubes
30 x 3..	$5.50	$2.00	34 x 4..	$ 9.25	$2.60
30 x 3½	6.50	2.10	34 x 4½	10.75	2.85
32 x 3½ S.S. only	7.60	2.20	35 x 4½	11.00	2.90
31 x 4..	8.60	2.40	36 x 4½	11.50	3.00
32 x 4..	8.75	2.45	35 x 5..	12.25	3.20
33 x 4..	9.00	2.60	37 x 5..	12.75	3.30

Send $2 deposit for each tire required and $1 for each tube. Balance C. O. D. subject to examination. If full amount is sent with order a discount of 5% will be allowed. State whether Straight Side or Clincher, Plain or Non-Skid required.
Morgan Rubber Co., Dept. 47, 2100 Morgan St., Chicago, Ill.

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IF YOU WANT to sell or exchange your property write me. JOHN J. BLACK, 118th Street, Chippewa Falls, Wis.

The Women's Exchange

This is the farm women's own department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JUNE 15.—What advantage do you take of the great outdoors for summer living? Maybe you move your kitchen, dining or bedroom to get away from the excessive heat, or have a rustic arbor or summer house where you can transfer many household duties. We would like to know also of any outdoor summer furniture which is cooling and restful for a hot day.

JULY 1.—Not all of us are in position to have ice all summer for keeping our food cool and sweet. How do you manage if you are one of the unfortunates? If you do have ice and a refrigerator tell us of any ways you have found to make it last as long as possible.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Fulfilling Memorial Day Obligations

Mrs. O. J., Rio, La.—Until three or four years ago our grave yard was badly neglected. It is one of the oldest in the country and fully one-half the graves were uncared for. Our Sunday school took up the matter, raised funds to purchase wire fencing for the plat, and neat wooden markers for all unmarked graves. Then we all spent two days erecting the fence, filling and marking graves, many of them nameless, cutting weeds and bushes, and sowing the whole area to perennial lawn seed.

Just inside the fence we planted a double row of privet cuttings. These have now grown around, completely covering wire and posts.

We now meet twice a year, oftener if necessary, to trim the hedge, mow the grass, plant flowers, clean up and burn all rubbish.

On Decoration Day each member brings a wreath, cross or other design. After the graves of friends and kindred are decorated, the little children march in line and place these on the stranger graves. I am partial to hardy bulbs for cemetery planting. Hyacinths, crocus, scillias, snowdrops, Star of Bethlehem, iris and tulips, once planted come up, year after year, bloom and die, without interfering with the sod. Peonies, violets, bleeding heart and Madonna or Easter lilies repay for a little extra trouble, and are generally in bloom by Decoration Day. Candytuft, alyssum, English daisy, phlox and forget-me-not are low-growing plants of easy culture. One of the most attractive graves we have is of a lady who was very fond of sweet peas, it is covered with one plant of giant white perennial pea which is allowed to trail over the ground lifting its clusters of snowy bloom above the rich dark foliage.

Mrs. M. B. Z., Newville, Pa.—As a child I looked forward to Memorial Day as one of the most pleasurable of all the holidays. Now, as the day approaches, I feel a sadness creeping over me. How I loved to see the brave men who risked their lives to make this a free country out on parade. Now there is only a small handful left and soon they will hear the last drum tap and the soldiers of the civil war will be only a memory. So let us give them flowers while they are still with us, as personally I cannot see how flowers can benefit the dead. How much more fitting it would be to send flowers to the hospitals and to children in homes in memory of the dead than place them on their graves where they neither see nor appreciate them. I prefer a nice green sod rather than a flower garden in the cemetery. One graveyard in our neighborhood has a coping of cement around each family plot and sod inside. That I think makes a neat, well-kept graveyard. There are some others where flowers, weeds and grass run riot—neglected and forgotten.

Mrs. P. W. L., Tiadaghton, Pa.—There is a little country cemetery near us so well kept that people come for long distances to bury their dead. There are no unkept lots in this cemetery, for when a lot is purchased the association assumes the care of it and all are kept neat. Many people plant flowers and shrubs, doing much work beside what is done by the association.

Memorial exercises are always held on the Sabbath nearest Memorial Day. This custom has grown up with the cemetery and it is unusual for any one to forget it. The program is especially fitted to the day, a suitable address, sacred and patriotic music, and prayer. The exercises are held in a grove in a corner of the grounds where seats and a speaker's platform have been erected. There is always a large crowd. Those who have left their old homes make a special effort to return at this time to renew old friendships.

Mrs. G. S. D., Denton, Md.—Lately there has been considerable community work done in New England at least, in clearing old cemeteries. Putting up fallen stones, erecting permanent fences, repairing walls, etc. The people make a "bee" and give their labor for a day, the women furnishing dinner. This is a fine idea.

I would prefer for myself to keep the individual graves smooth and green and trimmed like a lawn. If I had part of the lot vacant, or a margin beside it, I would plant flowering shrubs there; if not, I would use only annuals, replacing each year. I dislike to see a cemetery all overgrown with vines, or a lot with large, scraggly shrubbery, as often happens when from some cause there is no one to prune and care for it.

My ideal cemetery would be one that is one vast green lawn, divided by paths and driveways into lots, with low, simple, white or granite markers and monuments, no fences or curbings, here and there a lot planted to shrubbery, with blooming annuals on the graves, not more than one plant on each one, and none on those when the lot is partly vacant, so there is room for a shrub at one side. I think that would be much more artistic than the past style of a conglomeration of all sorts of displays in statuary. I would have trees and seats in some vacant part of the cemetery, also a hydrant and pails, so that the flowers could be watered, and I think the town should see that the place is kept mowed and free from trash.

Mrs. E. M. A., Ashville, N. Y.—In our immediate locality a Ladies' Auxiliary looks after the things and the cemetery is cared for, but none of our people have ever been buried in the nearest cemeteries. The one in which we are most interested is about three miles away and I haven't been able to learn that any one is doing anything.

According to my idea nothing is prettier on the individual grave than a well-cared-for and artistically supported white rambler. Evergreens are lovely but the most grotesque sight I ever saw was a cemetery full of them and every one dead. It seems as if dead plants of any kind look worse in a cemetery than anywhere else. Hydrangeas and spireas lend themselves well to cemetery work and are quite hardy. The neatest and most attractive graves, like lawns, are covered with an even, velvety sod and decorated with one or two really beautiful plants rather than many common ones.

L. M. S., Georgetown, Del.—Sometimes Memorial Day is celebrated with sports, especially a ball game, and Easter, or Christmas with a public dance! Now, suppose, during the war, a local paper had contained a notice similar to this: "Next Tuesday at one o'clock P. M. will be held a memorial service for our young heroes, Robbie Starr and Jimmie Blue, who fell gallantly defending the Flag, etc. After the exercises, there will be a ball game between the etc., etc." How does it sound? Suppose one of these boys had been your boy? But, those whose sacrifices we have honored hertofore—what do you think of such a memorial for your father, who suffered about sixty years ago? "The spirit of reverence"—let us pause, and consider in our earlier home town, the cemetery was beautiful, but, formerly, the above description was applicable to the observance of the Day. No longer is it thus observed.

Personally, the burial plot we prefer to be carefully lawned greensward, perfectly level, no shrubs, nor flowers on the individual lots, but the whole cemetery park like, with drives and plenty of shade. The cut-leaf weeping maple is applicable, with other kinds; also carefully-planned flower beds in unexpected places.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9634.—Ladies' waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. A plaited frill border with roll collar and falls in soft jabot effect.

9623.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. New lines appear in this frock which cuts its wide girdle in one with the front panel.

9613.—Ladies' blouse. Cut in sizes 36, 38, 40 and 42 inches bust measure. The very newest in slip-over blouses features the short kimona sleeve and collarless neckline.

9627.—Girls' dress. Cut in sizes 6, 8, 10, 12 and 14 years. Decidedly bloused is the waist and gathered is the skirt.

8427.—Child's rompers. Cut in sizes 1, 3 and 5 years. Checked gingham and chambray are combined to make this practical play garment.

9626.—Ladies' and misses' one-piece apron. Cut in sizes 16 years, 36, 40 inches bust measure. Surplice is the long collar, forming sash ends at the back.

9630.—Ladies' two-piece skirt. Cut in sizes 26, 28 30 and 32 inches waist measure. A soft plait at each side of the front and back gives a straight panel effect.

8716.—Ladies' skirt. Cut in sizes 24, 26, 28, 30, and 32 inches waist measure. The wide belt worn with this skirt gives the appearance of a deep yoke.

9620.—Ladies' and misses' negligee. Cut in sizes 16 years, and 36, 40 and 44 inches bust measure. The sleeves are set in and the negligee is perforated for both long and short length.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address
FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

SUNNY SLOPES

By Ethel Hueston

Copyright, 1917
The Bobbs-Merrill
Company

Author of Prudence of the Parsonage, etc.

CHAPTER XIX—Continued

"'I think I shall have a winter wedding, a white one, along in January; not in December—it might interfere with my Christmas presents.'

"'Connie——'

"'I am going to be very systematic about it. In this note book I am making a list of all the nice Mount Markers. I couldn't think of any myself right offhand, so I had to resort to the directory. Now, I shall go through the list and grade them. Some are black-marked right at the start. Those that sound reasonable I shall try out. The one that makes good I shall marry. I've got to hurry, too. My vacation only lasts a week, and I have to work on my trousseau a little. It's lots of fun. I am perfectly fascinated with it.'

"Dan had nothing to say. He looked at me with that blankness of incomprehension that must be maddening in a man after you are married to him."

Carol squeezed David's hand, and gurgled rapturously. This was her great delight, to get Connie talking so cleverly of her variegated and cosmopolitan love affairs.

"'I suppose you are surprised,' I said kindly, 'and naturally you think it rather queer. You mustn't let anyone know. Mount Mark could never comprehend such modernity. I feel very advanced, myself. I want to spring up and shout, "Votes for Women,' or "Up with the Red Flag," or "Villa Forever," or something else outspoken and bloody.'"

Carol and David shook with laughter, silently, not to interrupt the story.

"'How about love, Connie?' suggested Dan meekly.

"'I believe in love, absolutely. That is my strongest point. As soon as I find a champion, I am going to concentrate all my energy and all my talent on falling dead in love with him.'

"'Have you found any eligibles yet?'

"'Yes, Harvey Grath, and Robert Ingersoll, and Cal Keith, and Doctor Meredith.'

"'Where do I come in?'

"'Oh, we know each other too well,' I said with discouraging promptness. 'The real fascination in getting married is the novelty of it. There wouldn't be any novelty in marrying you. I know as much about you as your mother does—eggs fried over, meat well done, no gravy, breakfast in bed Sunday morning, sporting pages first—it would be like marrying father. Now, I must get to work, Danny, so you'd better trot along and not bother me. And you must keep away evenings unless you have a date in advance. You might interrupt something if you bob in unannounced.'

"'May I have a date this evening?' he asked with high hauteur.

"'So sorry, Danny, I have a date with Cal Keith.' I consulted my note book. 'Tomorrow night, Doctor Meredith; Thursday night, Buddy Johnson.'

"'Friday, then?'

"'Yes, Friday.'

"The next time he saw me he said, first thing, which proved he had been thinking seriously: 'I suppose it will be the end of my hanging around here if you get married.'

"Evidently he thought I would contradict him. But I didn't.

"'I am afraid so,' I admitted. 'My husband will be so fearfully jealous! He will be so crazy about me that he won't allow another man to come within a mile of me.'

"Dan snorted. 'You don't know how crazy he'll be about you.'

"'Oh, yes, I do, for when I pick him out, I'll see to that part of it. That will be easy. It is picking him out that is hard.'

"You know how Dan is, Carol. He is very fond of the girls, especially me, and he makes love in a sort of semi-fashion, but he never really wanted to get married. He liked to be a bachelor. He noticed how other men ran down after marriage, and he didn't want to run down. He saw how so many girls went to seed after marriage, and he didn't want them to belong to him. 'Let well enough alone, you fool,' was his philosophy. I knew it. He had told me about it often, and I always said it was sound, good sense.

"The second afternoon, I told him I was going to wear white lace to be married in, and had picked out my bridesmaids. I asked him where would be a nice place to go for a honeymoon, and he flung himself home in a huff, and said it was none of his business where I went, but he suggested New London or Danville. I showed no annoyance when he left so abruptly. I was too busy. I drew my feet up under me, and went on making notes in my red book. He looked out from behind the windows of the dining-room, carefully concealed, of course, but I saw him. I could hear him nearly having apoplexy when he saw me utterly and blissfully absorbed in my book."

Carol chuckled in ecstasy. She foresaw that Connie was practically engaged to Dan, a prince of a fellow, and she was so glad. That little scamp of a Connie, to keep it secret so long!

"Oh," she cried, "I always thought you loved each other."

"So?" asked Connie coolly. "Dan admitted he was surprised that my plans worked so easily. Before that he had been my escort on every occasion, and the town accepted it blandly. Now I had a regular series of attendants, and Dan was relegated to a few spare moments under the lilacs now and then. He couldn't see how I got hold of the fellows. He said they were perfect miffs to be nosed around like that. Why didn't they show some manhood? Boneless, brainless jelly fishes, jumping head first because a little snip of a girl said jump!

"The third day, I called him on the phone.

"'Dan, come over quick. I have the loveliest thing to show you.'

"He did not wait for a hat. He dashed out and over the hedge, and I had the door open for him.

"'Oh, look,' I gurgled. I am not a very good gurgler, but sometimes you just have to do it.

"Dan looked. 'Nothing but silverware, is it?'

"I was hurt. 'Nothing but silverware? Why, it is my silverware, for my own little house. It cost a terribly, criminally lot, but I couldn't resist it. I really feel much more settled since I bought it. There is something very final about silverware. See these pretty doilies I am making. Aunt Grace is crocheting a bedspread for me, too. Those are guest towels—they were given to me.'

"Dan's lips curled scornfully. He turned the lovely linens roughly, and wiped his hands on a dainty guest towel.

"'Connie, this is downright immodest—furnishing your house before you have a lover.'

"'I am disappointed in you.'

"'I am sorry,' I said lightly. 'But I am so excited over getting married that I can't bother much about what mere friends think any more. My husband's opinions——'

"'Mere friends!' he shouted. 'Mere friends! I am no mere friend, Connie Starr. I'm—I'm——'

"'Yes, what are you?'

"'Well, I am your pal, your chum, your old schoolmate, your best friend——'

"'Oh, that was before I was engaged.'

"'Engaged?' Dan was staggered. 'Are you really engaged, then? Have you found the right one?'

"'Being engaged alters the situation. You must see that.'

"'Who is it?'

"'Oh, don't be so silly. I haven't found the right one yet. But the principle is just the same. With marriage just ahead of me, all the rest of the world must stand back to give place to my fiance.'

"Dan sneered. 'Yeh, look at the world standing back and gazing with envy on this moonbeam fiance—look!'

"'Oh, Dan, it is the most fascinating thing in the world. In four months I may be standing at the altar, dressed in filmy white—I bought the veil yesterday—promising to love, honor and obey—with reservations—for the rest

(Continued on page 180)

After 10 Days

Your teeth may also glisten

All statements approved by high dental authorities

Millions of teeth now glisten as they have not done before. You see them everywhere.

A new method of teeth cleaning has, in late years, come into very wide use. Thousands of dentists are urging it. Multitudes of people have proved it and adopted it. And every person is now offered a free ten-day test.

To combat the film

The purpose is to combat the film which causes most tooth troubles. Film is that viscous coat you feel. It clings to teeth, enters crevices and stays. In the months between your dental cleanings it may do a ceaseless damage.

It is the film-coat that discolors, not the teeth. Film is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

Very few escape

Very few people have escaped some of these tooth troubles, despite the daily brushing. The ordinary tooth paste does not dissolve film, so the tooth brush has left much of it intact.

Dental research has for many years sought a way to fight this film, and the way has now been found. Many clinical tests have amply proved its efficiency. And now leading dentists everywhere are urging its adoption.

The method is embodied in a dentifrice called Pepsodent. And millions of people are new enjoying its benefits.

Sent to any one who asks

The Pepsodent results are quick and apparent. Everyone who sees them will desire them. So, to spread the facts, a 10-Day Tube is sent to anyone who asks.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

A new discovery has made pepsin possible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. But now a harmless activating method enables us to constantly fight the film coat in this way.

Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how the teeth whiten as the film-coat disappears.

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What Better Sheep Will Do

EDGAR L. VINCENT

While most farmers realize the value of sowing the best possible seed grain and planting the choicest potatoes, a great many do not seem to apply the same rule to the growing of sheep. Just why this should be so it is not easy to understand. These men will show their good crops of corn or wheat or potatoes with a great deal of pride; but when it comes to sheep, they have little to say, for their flocks are far from being worthy subjects for honest enthusiasm.

But will it really be worth while to get the better sheep that are so often spoken of by those who are interested in building up the sheep industry of this country? Or is the concern which these men manifest manufactured for the selfish purpose of making large sales of this kind of stock? This is not an unfair question and ought to have a candid answer. Suppose we take the case of the major part of the flock, often called the sire, leaving all the rest out of the question for the moment.

Just what will be the effect of placing a good, pure bred ram at the head of a flock, say of twenty-five sheep? It probably would cost from forty to sixty dollars today to buy a fullblooded ram of any of the leading lamb and wool breeds. But there is the best of evidence that the lambs the better ram will get, will sell for five dollars more than those of inferior breeding.

From the twenty-five ewes one should have at least an equal number of lambs. With good, lamb-bearing stock I have usually had one-half more lambs than that, or say thirty-five lambs from twenty-five ewes. But take it for granted that we get only one lamb to a ewe, and that we sell those lambs for five dollars more than the inferior stock would bring, we have for a single flock of lambs an increase of $125.00. If we get $15.00 each for these lambs, that means $375.00, all told, for the season's sale.

But it is not alone on the lambs that we can count up an added profit. The better ram will give us sheep that will shear more wool than will the sire of low ancestry. It is not too much to count on three pounds more of wool from the well-bred sheep a year. In some cases four pounds have been gained by the higher pedigreed ram. While we do not know what the price of wool will be another season, it is not an unreasonable estimate that it will not be less than fifty cents a pound. Three pounds more of wool at fifty cents a pound gives us $1.50 to credit on the account of the good sire, making, with the gain from the better lambs, a total for twenty-five sheep of $162.50 for a single season.

And I am not going to stop there. The man who invests in a well-bred ram and sees what a difference that one sheep is making in his receipts for the year, will be led to buy ewes that are of the best possible blood to mate with his finer ram. With this new blood on both sides will come still better lambs and more and finer wool. The more highly bred are the ewes and the rams used, the greater will be the returns for wool and lambs sold for meat.

Is this a dream? I have myself proved that it is not. Any man who has followed this road knows that it is positively true. You can trace the same thing in stock of all kinds, hogs, cows, horses, even hens. From the better sire flows a stream of greater profit to the man who places him at the head of his flock.

Then, too, there is still another side of the question which cannot be overlooked. The man who has the choicer stock will be in a position to sell all his surplus sheep and lambs at a higher price than he could possibly realize from the poorer animals. Here is an advantage that is real and lasting as long as the farmer keeps up the standard of his pure-bred stock.

It is not my purpose to argue this matter further now. Just try it, fellow farmers, and prove the truth of what I have said for yourselves. *New York.*

Jap's Fontaine Dorcas, a purebred Jersey, which produced 853 pounds butterfat in one year

Molasses as a Steer Feed

In an attempt to determine the value of cane molasses as a substitute for part of the corn ration for two-year-old steers, a test was recently conducted at the Pennsylvania State College. Two lots of six steers each were placed in the feeding pens and careful records taken regarding their food and gains. The initial cost of these cattle was $12.00 per hundredweight.

Lot I received a daily ration of 35.67 lbs. silage, .57 lbs. mixed hay, .23 lbs. corn stover, 12.96 lbs. broken ear corn (first 84 days), 14.96 lbs. shelled corn (last 56 days), and 3.18 lbs. cottonseed meal. This lot of cattle made an average daily gain of 2.27 lbs. at a cost of $26.21 per hundredweight. The final value as appraised, was $12.50 per hundredweight, resulting in a loss of $37.62 per head.

Lot II received daily 35.69 lbs. silage, .56 lbs. mixed hay, .27 lbs. corn stover, 8.94 lbs. ear corn (first 84 days), 9.94 lbs. shelled corn (last 56 days), cane molasses 4.66 lbs. and cottonseed meal 3.18 lbs. The molasses was fed at the rate of one-third of the corn allowance in Lot I. The average daily gain for this lot was 2.55 lbs. per steer, and the cost of gain was $24.26 per hundredweight. The final appraised value was $13.00 per hundredweight, making a loss of $27.15 per steer.

While both lots of these steers lost money, due to the low selling price, it will be noted that the lot fed molasses made gains two dollars a hundred pounds cheaper than the other lot.

Farm Happenings

AS TOLD BY THE BOSS

Some of the young calves have been getting roots during the spring. It is surprising how it has improved their condition and appetite. It requires a lot of labor to grow roots, but it seems mighty fine to have a few on hand in the spring.

Be sure that the feet of the sheep are properly trimmed before they are turned out on pasture. This can best be done at shearing time. A pair of pruning shears come in handy for this work.

The sheep have all been sheared and we have one of the best clips that we have ever produced. The wool will be graded and handled through a county wool association.

The long winter that we have just passed through makes us realize more than ever the importance of a silo in connection with the keeping of live stock. The use of silage makes it possible to carry a greater amount of live stock through the winter than when no silage is used. The cattle and sheep also come out of winter quarters in better shape than when fed on dry feed alone.

The cattle have been marketed and the returns from the operation were not as satisfactory as during the past few years. Based upon market price for all feed consumed the cattle lost from twenty to forty dollars per head. There is one redeeming feature about it, however, they left a lot of valuable manure and they also consumed considerable farm feed that could not have been marketed in any other way to advantage.

The spring lambs are doing well and they appreciate the opportunity to get a little green grass. It is a good plan to let all the sheep have access to a little grass as early in the spring as possible.

The breeding herd and young stock will go out on pasture as soon as the grass is in good shape. It pays to let the grass get a good start before it is pastured. The desirable effects of such practice will be noticed all summer.

The wet spring has been hard on the pig crop. The losses have been heavier than usual on account of so much rain and muddy lots.

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F. A. HARRISON
200 North Second St., Harrisburg, Pa.
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News From the Breed Associations

The American Jersey Cattle Club has just closed the most successful year of its existence. The past twelve months have witnessed a great deal of progress in every phase of the Jersey business and in every branch of the Club's activities. Registrations and transfers of Jerseys have reached a new high record, showing a substantial increase over the figures for the previous year. The number of breeders doing official testing at the present time is an increase of more than 80 per cent. over last year. New production records have been made in the various classes. "Plain Mary" captured the title of champion producer of the Jersey breed from "Vive La France" with a production of 1040 pounds fat. A record no less remarkable is the one made in the yearling class by "Lulu Alphea of Ashburn," which produced 800 pounds fat in a year's test begun at the age of 22 months.

At sales, both public and private, Jerseys have brought higher prices than ever before. New high price records were set for both cows and bulls. The popularity of the breed is becoming more apparent in every section of the country, the large increase in the number of new breeders being proof of this.

It is interesting to note that since the beginning of the practice of recording pure-bred hogs in this country there have been approximately 3,500,000 head of hogs recorded during the period of about 45 years during which associations have been keeping the records. A large percentage of the total number of hogs which we now have carry some of the blood of the hogs of the various breeds; many of the hogs are purebreds but have never been kept recorded; and too large a number of our hogs today show no good breeding from any of the pure breeds.

The Fifth Annual National Swine Show will be held on the Iowa State Fair Grounds, Des Moines, Ia., October 4th to 8th inclusive. With a few exceptions, the classification will be identical with that of previous years and will include $2,000.00 classification for each the Berkshire, Chester White, Duroc-Jersey, Hampshire, Poland-China and Spotted Poland-China breeds, and $1,000.00 classification for each, Large Yorkshires and Tamworths. The Duroc-Jersey Futurity will carry a $2,000.00 classification this year instead of $1,000.00 as has been the custom in the past.

The National Duroc-Jersey Record Association is now mailing its sixty-third volume of pedigrees. It contains the records of male hogs Nos. 295501 to 300999, inclusive, and females from Nos. 743000 to 766998.

The American Shorthorn Breeders' Association has appropriated, for prizes of all classes, for the year 1920, $150,000. This amount is approximately 50 per cent. greater than that appropriated for 1919, which was very much in excess of any amount ever previously set aside for Shorthorn prizes. As much of this is appropriated on the basis of $1 paid by the Shorthorn association and $2 by the fair or show association, and a large percentage on a fifty-fifty basis, it will be seen at once that the total amount which will be offered for Shorthorn prizes throughout the United States will probably reach over $300,000 for the current year.

Shorthorn cows averaged 1146 lbs. of milk and 46 lbs. of butterfat, an average test of 4 per cent, for the month of February, for the 22 cows making 1,000 lbs. of milk or 40 lbs. of butterfat, as reported to the milking Shorthorn secretary, Roy A. Cook, Independence, Iowa. Bellevue Herd, Conshohocken, Pa., has the high cow, Rosemary 2nd, which gave 1459 lbs. milk, 71 lbs. fat.

The fifty-second annual meeting of the American Jersey Cattle Club will take place on Wednesday, June 2d, in New York City. The Club's banquet will be held at the Waldorf-Astoria hotel the night before the meeting.

The roll of honor classes of Ayrshire advanced registry testing, inaugurated some two years ago, is proving popular with many breeders. In these classes any cow to be eligible must conform to all the requirements for her class in advanced registry in a period of 300 days from and after day of entry, instead of one year, and in addition she must produce a living calf which she has carried for at least 180 days of test period. To the winners in the various classes each year the Ayrshire Breeders' Association awards suitable trophies. In the seven roll of honor classes, no fewer than four of the trophies go to Pennsylvania and to four different breeders. Wisconsin, New Jersey and West Virginia annex the remainder. The following are the 1919 awards: Mature Class AA—Soapstone's Howie Queen 33443, owned by Dr. T. A. Ashton, Delchester Farm, Edgemont, Pa., 13,907 pounds milk, 620.72 pounds fat. Senior Four-Year-Old Class BB—Finlayston Bell's Daisy 38919, owned by Masonic Homes Farm, Elizabethtown, Pa., 11,549 pounds milk, 490.75 pounds fat. Junior Four-Year-Old Class CC—Molly Ayr of Aldebaran 39833, owned by Stephen Bull, Aldebaran Farm, Racine, Wis., 10,241 pounds milk, 427.75 pounds fat. Senior Three-Year-Old Class DD—Ryanogue Lady Peggy 40337, owned by W. P. Bliss, Wendover Farm, Bernardsville, N. J., 13,028 pounds milk, 520.35 pounds fat. Junior Three-Year-Old Class EE—Garclaugh Spottie 2d 47153, owned by John R. Valentine, Highland Farm, Bryn Mawr, Pa., 9645 pounds milk, 396.95 pounds fat. Senior Two-Year-Old Class FF—Anna Betty 48331, owned by Percival Roberts, Jr., Penshurst Farm, Narberth, Pa., 12,071 pounds milk, 447.77 pounds fat. Junior Two-Year-Old Class GG—Irma Douglas 2d 46543, owned by L. A. Reymann Est., Hill Top Farm, Wheeling, W. Va., 7740 pounds milk, 332.82 pounds fat.

WHEN MORNING LIFTS ITS GATES

EDGAR L. VINCENT

AFTER the long winter it seems good to let the cows go out to pasture. For months they have had to be cared for in the stable; but now in the morning we turn them down the lane, to pick their way out and up the hillside to the green fields beyond the meadow. At night lazily they dream the road back through the gathering shadows, to lie till morning.

And now we set out through lane and verdant slopes by the first light of the new day, to bring them home again for the morning's milking. How still it is! The twitter of a few birds, out early to greet the coming sunrise; the deep baying of a dog away down the valley; these are all the sounds that break in upon our meditations. On every shrub some time in the night God has hung His pearls of dew. How they sparkle when the sunlight at last falls upon them! Earth, sky and tree are transfigured in glory.

Last night we were tired, too tired to think of the beauty all about us; but now our souls leap in melody. Thanksgiving fills our hearts to the full. Who would care to be shut up in the city, with its miles of stifling air and its din and crash of noise never-ending! This is God's best, most beautiful place for His children. How good He is to place us here and to bless us with the free, pure air, the mystic dawn, the sunset splendors, the glories of trees newly robed in green, grasses nodding their recognition as we pass and the heartening sights and sounds of the great open country! Here on this mossy mound, let us pause for a moment to let the soul wing its way through the gates of the morning up to God. What is it that comes to our minds most forcibly just now? What but the notes of the shepherd's song of long ago. With bare heads we lift the grand old hymn once more.

"Lift up your heads, O ye gates, and be ye lift up, ye everlasting doors, and the King of Glory shall come in.

"Who is this King of Glory? The Lord, strong and mighty, the Lord, mighty in battle.

"Lift up your heads, O ye gates; even lift them up, ye everlasting doors, and the King of Glory shall come in.

"Who is this King of Glory? The Lord of hosts, He is the King of Glory!"

And as we sing it out, away yonder across the valley the echoes take it up.

"Lift up your heads, O ye gates!"

Then a stronger voice repeats the thrilling notes. We lean down our souls and listen, for that is the voice of a neighbor, taking up the chorus we have begun and sending it on and on through glen and glade, over meadow and wood and pasture. The thanksgiving of your heart and mine has set the world to singing, and all is well! The morning lifts its gates and heaven's gates, too, are swung wide to let in the flood of song from mortal lips, your lips and mine!

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A BEAUTIFUL, straight, solid light fawn Jersey Bull, 8 months old, rich in the great Noble of Oaklands blood. A bargain and a prize. W. F. McSPARRAN, Furniss, Pa.

Sunny Slopes

(Continued from page 177)

of my life! A little home of my own, a husband to pet and chum with! I am awfully happy, Dan, honestly I am.'

"And, Carol, I did enjoy it. It was fun. I was simply hypnotized with the idea of having a house and a husband and a lot of little Julias. Dan glared at me in disgust. Then he went home, snarling about my mushiness. But he thought it was becoming to me. He said I got prettier every day. I would not even let him touch my hand any more. You know, Dan and I were pretty good pals for a long time, and he was allowed little privileges like that. Now it was all off. Dan might rave, and Dan might storm, but I stood firm. He could not touch my hands! I was consecrated to my future husband.

"'It may not be wicked, Dan. I do not say it is. But it makes me shiver to think what would happen if my husband caught you doing it. He might kill you on the spot.'

"'You haven't got a husband,' Dan would snap.

"'The principle is just the same.' Then I would dimple up at him. I am not the dimply type of girl, I know, but there are times when one has simply got to dimple at a man, and by wrinkling my face properly I can give the dimple effect. I have practiced it weary hours before the mirror. I have often prayed for a dimpled skin like yours, Carol, but I guess the Lord could not figure out how to manage it, since my skin was practically finished before I began to pray. 'I keep wondering what he will like for breakfast,' I said to Dan. 'Isn't that silly? I hope he does not want fried potatoes. It seems so horrible to have potatoes for breakfast.' Then I added loyally: 'But he will probably be a very strong character, original and unique, and men like that always have a few idiosyncrasies, so if he wants fried potatoes for breakfast he shall have them.'

"Dan sniffed again. He was becoming a chronic sniffer in these days of my engagement.

"'Yeh, he'll want fried potatoes, all right, and postum, and left-over pumpkin pie. I have a picture of the big mutt in my mind now. "Constance," he'll say, "for pity's sake put more lard in the potatoes when you fry them. They are too dry. Take them back and cook them over." He will want his potatoes swimming in grease. He is bound to; that's just the kind of man he is. He will want everything greasy. Oh, you're going to have a sweet time with that big stiff.'

"I shook my fist at him. 'He will not!' I cried. 'Don't you dare make fun of my husband. He—he——' Then I stopped and laughed. 'Isn't it funny how women always rush to defend their husbands when outsiders speak against them? We may get cross at them ourselves, but no one else shall ridicule them.'

"'Yes, you are one loving little wife, right. You sure are. You won't anyone say a mean word against ur sweet little snookie-ookums. Oh, Wait till you get to darning his cks; you won't be so crazy about n them.'

"Dan neglected his patients until it a wonder they did not all die—or well, or something. He sat upstairs his study watching an endless procession of Harvey Graths and Buddy nsons, coming, lingering, going.

"That night, regardless of the illuminating moon, I took Buddy Johnson to the lilace corner. Dan was upstairs smoking in front of his window. Buddy didn't know about that window, but I did. He took my hand, and I let him. I leaned my head against his shoulder—not truly against, just near enough so Dan could not tell the difference. Buddy tried to kiss me, and nearly did it. I wasn't expecting it just at that minute. Dan sprang from his chair before the conclusion, so he did not know if the kiss was a fact or not. Then I moved two feet away. Dan came out and marched across to the lilacs.

"'Connie,' he said, 'I am sorry to interrupt, but I need to talk to you a few minutes. It is a matter of business.' To Buddy he said: 'You know, Connie always helps me out when I get stuck. Can you give me a minute, Connie?'

"I said: 'Of course I can. You'll excuse me, won't you, Buddy? It is getting late, anyhow.'

"So Buddy went away, and Dan marched me up on the porch, where it was dark and shady.

"'Are you engaged to Buddy Johnson?'

"'No.'

"'Thank Heaven.'

"Dan kissed me, regardless of the accusing eyes of my husband in the background."

Carol breathed loudly in her relief. He kissed her. Connie did not care. They were engaged.

"Dan breathlessly took back everything he ever said about getting married and being a bachelor and so forth. He said he was crazy to be married, always had been, but didn't find it out before. He said he had always adored me. And I drew out my note book, and showed him the first page—Dr. Daniel Brooks, O. K. And every other name in the book was checked off.

"Dan was jubilant." Connie's voice trailed away slowly, and her earnest, fine eyes were cloudy.

"An engagement," cried Carol, springing up.

"No," said Connie slowly, "a blunder."

"A blunder," faltered Carol, falling back. "You did it on purpose to make him propose, didn't you?"

"Yes, and he proposed, and we were engaged. But it was just a blunder. It was not Dan I wanted. Carol, every woman feels like that at times. She is full of that great, magnificent ideal of home and husband and little children. It seems the finest thing in the world, the only flawless life. She can't resist it, for the time being. She feels that work is silly, that success is tawdry, that ambition is wicked. It is dangerous, Carol, for if she gets the opportunity, or if she can make the opportunity, she is pretty sure to seize it. I believe that is why so many marriages are unhappy. Girls mistake that natural woman-wish for love, and they get married, and then—shipwreck."

Carol sat silent.

"Yes," said David sympathetically. "I think you are right. You were lucky to escape."

"I knew that evening, that one little evening of our engagement, that having a home and a husband, and even a little child like Julia, would never be enough. Something else had to come first. And it had not come. I went to bed, and cried all night, so sorry for Dan, for I knew he loved me—but not sorry enough to make me do him such a cruel injustice. The next morning, I told him, and that afternoon I returned to Chicago.

"I have thought a whole lot more of my job since then."

"But why couldn't you love him?" asked Carol impatiently. "It seems unreasonable, Connie. He is nice enough for anybody, and you were just ripe and ready for it.

Connie shrugged her shoulders. "Why didn't you love somebody else besides David?" she asked, and laughed at the quick resentment that flashed to Carol's eyes.

"Well," concluded Connie, "God certainly wanted a few old maids to leaven the earth, and I think I have the making for a good leavener. So I write stories, and let other women wash the little Julias' faces," she added, laughing, as Julia, unrecognizably dirty, entered with a soup can full of medicine she had painstakingly concocted to make her daddy well.

(To be continued)

Blue Buckle Over Alls

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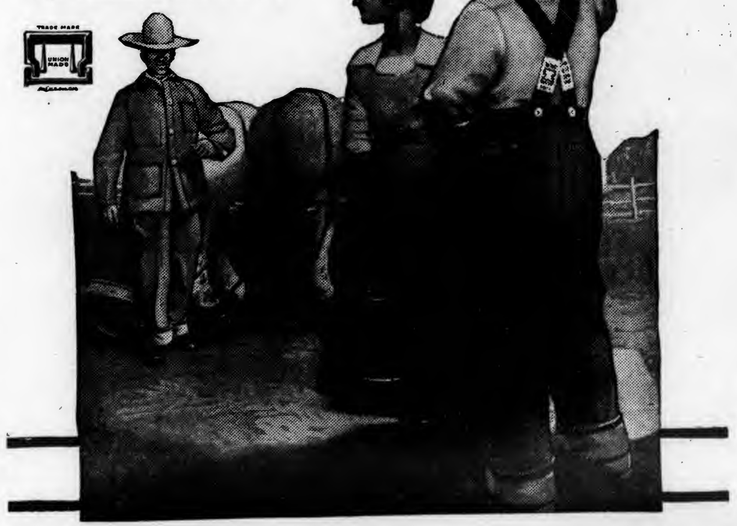

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The Practical Farmer

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Cutting Distance Between Producer and Consumer

By JOHN DAY

RECENTLY, when retail eggs were selling on the Washington, D. C., market for 74 cents a dozen, a shipment of 45 crates of eggs from Warsaw, Va., was delivered by parcel post service via one of the government motor trucks and distributed among national capital consumers at 59 cents a dozen. This shipment of eggs, which was marketed directly from the producers to the consumers through the assistance of Uncle Sam, aggregated a net saving of $202.50 for the householders who participated in it, and is only typical of an efficient service which Washington purchasers are utilizing in combatting existing high living costs.

On July 1, 1918, the United States Post Office Department inaugurated its rural truck route service largely as an experiment. At this time the project was accorded wide publicity as it was something new and novel in the way of modern mail service which was capacitated to handle farm produce such as fruits, vegetables, fat hogs, calves, poultry, eggs, milk, cream and other articles which in many instances could not be ordinarily carried by parcel post service. The factor that appealed to the farmers who were fortunate enough to reside proximate to one of the truck routes was that all they had to do was to put their produce out on a loading platform on the highway, properly stamped, with parcel post stamps, and the truck would collect the material and deliver it to the city consumers a few hours later. Furthermore the Post Office authorities located dependable city buyers in the form of public and private trade which purchased all the produce the farmers would ship. Satisfactory arrangements were also made by the government representatives for collecting the money for the farm produce, so that the producer received his cash a day or so after he shipped the goods on a sort of collect on delivery scheme.

Some of the producers arranged with private families to handle so much produce once or twice a week and such customers often paid by the month for the purchases which they made. The plan has met with such favor that at the present time the federal government is operating eight truck routes which terminate in the national capital, some of the routes, however, merging as tributaries with others, all of whose ultimate destination is Washington. The routes now include one from Warsaw, Va., to Washington, another from Bluemont, Va., a third from Harper's Ferry which connects with another from Newmarket, Va., one from Winchester, Va., to Washington, as well as one that runs from Gettysburg, Pa., by way of Frederick, Md., into Washington. Other subsidiary routes from McConnellsburg, Pa., Bedford, Pa., and Hancock, Md., also connect with the Frederick, Md., line which runs into the capital city.

Government motor trucks and good roads are aiding farmers in direct marketing operations

In Washington, the farm produce from the truck routes, in addition to supplying private families with cheap, satisfactory and wholesome food, also stocks the various government department co-operative stores which are aiding the federal employees in knocking the H out of H. C. L. Right now the trucks are providing produce for the Army and Navy store, the Government Printing Office commissary, the Navy Yard store and the Post Office store as well as catering to the needs of the different community center stores which are gaining in popularity and spreading like a contagious disease. Of course the supplies for hotels, restaurants and wholesale dealers, to a certain extent, are also marketed through Uncle Sam's mail service, although, primarily, the service is designed to aid the consumers to locate cheaper and yet quality produce and to assist the producers to solve their marketing problems by the practice of direct salesmanship sans the services of intermediaries.

The government rural mail truck routes are well managed in a strictly business-like way. To start with, relief stations were provided about midway along each route, so that in case of accidents the emergency truck could be used to replace the original route truck. However, during the last six months all these reserve stations have been abandoned because the demands for relief in the way of extra trucks have been so few that they did not justify the future maintenance of the emergency stations. This is almost entirely due to the experienced and qualified drivers and mechanics who are employed in the truck mail service. These men are hired on probation and subsequently the fit are retained and the unfit are weeded out of the service. This system has worked well and has provided the mail truck service with a competent and experienced lot of operators. Preference has been given to returned soldiers in the employment of men for this motor service. Drivers, according to their experience and the route which they handle are paid from $1400 to $1700 a year, while mechanics receive from $1400 to $1850.

Generally three trucks are recruited for service on each route, so that a new truck is used each day, every truck on alternate days after a trip—which runs from 100 to 250 miles or more—being kept in the garage, where it is overhauled, oiled, greased and generally toned up for its next journey. This system of management minimizes accidents and delays on the roads and abets the securing of maximum service and efficiency from each vehicle. Practically all the trucks which are now used were secured from the War Department subsequent to the signing of the armistice and are of the overseas type designed for rough and continuous service. It is interesting to note that the greatest efficiency

results from the use of large three- and five-ton trucks, which are cheaper to operate and reduce the freightage charges. The accounting which has been practiced by the federal Post Office Department shows that it costs about 30 cents a mile to operate a three-ton truck; 20 cents a mile to operate a one- and one-half-ton truck and 18 cents a mile to run a truck which carries from three-quarters of a ton to one ton of freight.

The routes have been operated through farming sections which are equipped with hard, permanent highways, passable and serviceable throughout the year and which do not have good railroad service. The contention of the federal authorities is that where the rail service is satisfactory there is no reason, under existing conditions, for the establishment of a rural motor mail service. Furthermore, the appropriation which the Post Office Department has had for this work has been very small, so that the project could not be extended very widely. The salient feature in the results which have accrued to date is that the service is practical and profitable; that it is no longer in the experimental stage but is a demonstrated, irrefutable service which is of vast value to the producers and consumers.

The ordinary parcel post rate for produce or supplies which can be handled over the truck routes is one cent a pound in one zone. A modification of this ruling has been made which allows perishable products like fruits and vegetables to be transported by truck for one half a cent a pound. The weight limit is 70 pounds, but with respect to hauling stuff by motor truck, the rural postmasters usually are very liberal in the interpretation of this requirement, and if a farmer has a calf or hog to send to market by truck which exceeds this weight they usually accept the animal on the payment of the extra transportation charge for excess weight. Usually before a route has been established the federal experts have surveyed the territory thoroughly to ascertain definitely that the volume of produce flowing to market over the year justifies such service, that the roads are suitable to year-round motoring, that the truck route will not compete with railroad mail service and that in every instance the establishment of the motor mail service will be a permanent asset to the community.

Generally the post office trucks carry a load each way, as on their return trips to the country they take back empty egg and poultry crates, milk and cream cans as well as fresh meats, oysters and other supplies which the country people have difficulty in obtaining. In this way the expenses of operating the routes are reduced, while the service which the system performs for the producers becomes of dual utility, in that it aids them in buying as well as selling. It is estimated that approximately 278,745 pounds of mail were handled on the Washington-McConnellsburg, Pa., and the Washington-Winchester, Va., and Washington-Warsaw, Va., routes during the period from July 1 to October 31, 1919, while 1,019,142 pounds of mail were handled during the same period on the rural truck routes which connect Philadelphia, Rising Sun, Soudersburg, Lancaster and Gettysburg, Pa., with Easton, Md., and Washington, D. C. The majority of this mail consisted in each case of farm produce which was sent to the cities to be marketed.

During late October a shipment of 103 bushels of apples from Purcellville, Va., sold for $1.08

(Concluded on page 185)

Blindfold Marketing

R. B. RUSHING

ONE day last winter, I was away from home and had gone to the station to take the return train. When I got to the station I noticed a car side-tracked nearby, with four or five wagons beside it and a crowd of men standing there. These men had hauled and filled the car with sweet potatoes for shipment to "the market," as they said. I asked what market they were shipping to and they said they had not yet decided. They named over six or seven points they were thinking of. One named a certain market, which he thought good, and another man said, "My potatoes will not go there, for the commission man there skinned me out of the last shipment I made him, and I am done with him."

I listened to their conversation some minutes, and finally asked what they could get for them at the different points where they were thinking of shipping. Not one of them knew what potatoes were worth in those markets. They had never got prices but just thought they would "try a shipment anyway." Just try a shipment anyway! How did they know their potatoes would bring enough to pay the freight? Then I asked them if they did not have room enough to hold them until they knew what they were doing. They all said they had good houses and could have kept them longer, but they just thought they would ship out some and try it. One of the men, who showed he was about the poorest posted along such line, had the greater part of the car, and so they decided to ship just where he wanted to.

Just ship where he wanted to, when he did not know one thing about the market! He had worked hard all summer to raise these potatoes, and they were good ones, too, and here he was sending them off, not knowing to whom he was shipping, where the best prices were, or whether they were selling at all or not. I raise sweet potatoes myself, and I know sometimes they do not sell at all. It is little wonder to me that such men are complaining of not making money on their produce.

These men lacked one big essential for farming success, and that is successful marketing ability. I asked the station agent if they always did this way, and he said "yes"; and he also said they never got much for their produce, sometimes a little and sometimes scarcely enough to pay expenses. Now this is not business. These men claimed that a certain commission house would steal. Well, there maybe men in the commission business who are out for all there is in it, and there are also commission men who are just as honest as any farmer, and always will deal on the square. I have never had much trouble with the commission business, and usually get good prices. And I surely think, from my own personal experience, that there is as much need for system in marketing as there is for honest commission men.

Not even an honest commission man can get good prices for produce when the market is glutted and the price is below a level to make it profitable. Thus it can easily be seen that if the markets are well understood, and then acted upon accordingly, much stuff that is dumped on a glutted market can be placed at a time when the price is better. This will apply in a measure to most produce, and especially to such perishable produce as sweet potatoes. Let us not quit growing them because we may lose one or two shipments, but raise them, and then place them on the market at the right time. *Ill.*

LET'S HIDE OUR HEADS IN SHAME

EDGAR L. VINCENT

A SHADOW fell over our peaceful valley the other day. A visitant all earth dreads had passed that way, and when he went on he took with him one that was dearly beloved. She had been wife, mother and friend to many. We felt it that she should have been chosen to walk down the Valley of the Shadow with that grim messenger; and yet, who can doubt that it was well? He who knows and can see farther than any of us makes no mistakes.

We gathered in the home to show our sympathy to the husband and his boys and girls, and to listen to the words of the man of God as he spoke the last farewell. It fell to me to go through the front rooms to the kitchen. I was not alone—a number of neighbors had been crowded into that little room; but it was some time before I noticed one occupant of the kitchen that I had not thought of being there at first. Under the table, stretched at full length, lay the old house dog. Homely old fellow! Who would have the heart to say he should not sleep there, even while this last sad ceremony was being performed?

So he lay there almost motionless for a long time. The minister had finished reading the words of comfort from the Good Book. He had hopefully pointed those who were left to the Source of the Mother's comfort. He dwelt bravely upon the duty of us all to be good and kind and true, even as this Mother in Israel had been, and then there was a hush, the hush we always dread so much, the time of the swinging of the earthly doors outward, that the gates of the Beyond might turn back to let the tired wanderer in.

From that front room now came first a subdued sob, the sob of a man with a broken heart. Then other muffled sounds of suppressed emotion, as husband, daughters and sons bowed their heads and hearts beneath the bitter blows of sorrow. Who has not felt his heart bleed in an hour like this? And it is the lot of every human being once to pass this way.

Now came a strange thing. The old dog that had so long lain there asleep stirred himself at the sound of trouble which came to his listening ears. He roused himself, crept from under the table and stepped along toward the room where the weeping friends were bending over the casket from which the treasure had been taken. There he stood, listening, watching, mutely grieving. Grieving? Why should we doubt it? It must be he had been stirred into pity and love and tender sympathy. His heart had been touched by the same sense of loss that so stirred his human friends. It was a touching sight, and one I never will forget.

And yet, some were in that room whose hearts were not stirred by the passing tragedy. God help them! They sat there as cold, as passionless, as unsympathizing as if they had been made of stone. The dog mourned; they showed no signs of sorrow. He realized that something had happened to stir those he loved to the very depths of their hearts; they drew their robes about them and went away to go on with their everyday work, as if nothing had come to disturb them in their plowing and reaping, their sowing and gathering into barns.

Who had the biggest heart? The dog or those who had no pity?

Honor Where Due

THE field of science recently bestowed no little honor on Pennsylania and its State College when Dr. H. P. Armsby, director of the Institute of Animal Nutrition at the college, was elected a member of the National Academy of Science. Membership in this organization is restricted to those who have distinguished themselves in scientific research. For the past eighteen years Dr. Armsby has conducted experiments on an animal calorimeter, the only apparatus of its kind in America for determining what use an animal makes of the food it eats, and which was designed and constructed by him with the aid of J. A. Fries, assistant director of the institute.

The results of their many tests with the calorimeter have been of great value to dairymen and steer feeders throughout the country, for it is possible to compute a balanced ration through knowing what use the animal makes of every ounce of its food and water. Co-operation with the Bureau of Animal Husbandry of the U. S. Department of Agriculture and the college school of agriculture has made it possible to obtain much valuable data in this respect. His many other efforts along the lines of advancement for animal nutrition make Dr. Armsby a worthy member of the National Academy of Science. He is still experimenting with the calorimeter.

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JUNE 1, 1920

Another Case Where the City Calls

RECENTLY we have referred several times to the farm labor situation and cannot help it again as we read a report from the Bureau of Crop Estimates regarding conditions in Michigan. It has been compiled from detailed reports of rural school directors and seems so far to be the winner for seriousness. It shows 18,232 idle farms containing 1,666,000 acres as compared with 11,831 idle farms last year. On the farms of the state there are also 30,300 vacant houses, and of the 276,000 men on the farms three years ago, 46,000 have since left, 20,000 of them during the past year. Figuring this down for each farm in the state it shows that during April there was an average of only 11 men and boys for every ten farms. The reason given for this striking exodus from the farms is the higher wages paid in other industries. Just how long conditions of this kind can continue is problematical, but surely we have to stop some place. Those who stay on the farm and have the facilities to produce largely this year, would seem to have the advantage over those who chase the big wages and find mostly bigger expenses. Food in the city cannot be made cheaper if there is not enough to go around, and we have little faith in the suggestions being sent out from Washington by one of the press associations that it will come down in price if people will stop buying for awhile. Of course some people can stop buying strawberries and eat beans or eliminate asparagus from the menu and return to cabbage, but they cannot stop for any length of time buying "food." Things will eventually work back naturally to make a balance between supply and demand of all products, but it looks as if the scale was so much tilted to one side now that some spills, causing hard bumps, must occur before this good nation is running smoothly again.

Looking Inside of a Bubble

BOOM land values struck Iowa last year and most of us had a more or less vague idea that all farmers out there were getting rich quick. Along comes a report now from the Department of Agriculture at Washington, telling us that probably less than ten per cent. of the farms in that state changed hands during the boom and about two-thirds of the increase between the total buying and selling prices was appropriated by town and city people. While farmers were heavy buyers, they were not as heavy sellers, 65.3 per cent. against 56 per cent., and those who bought at the high figures now have a big problem on their hands to make ends meet. They only own five per cent. of the farms in the state, however, and while the remaining 95 per cent. have marked up the prices of their farms, the report aptly states they can be marked down again without any great inconvenience to anybody. Under these conditions a tenant is better off in many ways than an owner. His rent is considerably less than the interest on money needed to buy a farm and even if he could borrow it, taking conditions prevailing the year before the boom, he could not hope to meet the charges. This is a good example of a case where the general principle of increased credit to combat the growing increase of tenancy is of no avail. It is a case where land costs more than it returns with the usual methods of farming and about the only way to remedy it is to educate the owners to a realization of true land values.

At Least One Thing Promised Cheaper

AT least one thing farmers have to buy will be cheaper this season, if we can put faith in reports coming from the U. S. Department of Agriculture. The supply of binder twine, it says, will be plentiful and cheaper. The reason is, according to the report, because Yucatan—the chief and cheapest source of henliquen, from which the twine is made—produced a large crop this year. This fact, together with the termination of a price agreement, made the fiber drop from an earlier price of fifteen cents to eight cents a pound about the first day of May. This reduction the officials believe should be noticeable in the price of twine this season. In order not to raise hopes too high, however, they point out that growers in Yucatan are discouraged with the low price and are reducing their planting, with the result that a real shortage may occur five or six years hence. Whether this is not crossing bridges before we get to them is a question, especially since we seem to be entering a period of falling prices generally. The recent troubles in Mexico did not effect the important production center of henliquen, as most of the fiber was already in the United States, so these little "wars" will form no legitimate excuse for higher prices of the all important binder twine.

Neighboring Federation Gets to Work

IN Ohio, our neighboring state, the Farm Bureau Federation is now down to real work. It has established temporary offices in Columbus and an executive secretary has been employed. Eleven counties in the state have had ten dollar membership campaigns and in them 17,334 farmers, or an average of 1575 per county, have shown their faith in the new organization by paying the advanced amount. Under the old one dollar membership plan there was only an average of 728 members in each of these eleven counties, so it would seem as if the proper effort and proper incentive can obtain results. Objection and doubt have been expressed regarding the advisability of materially increasing farm bureau dues, but results in Ohio and other places at farther distance have shown the practicability of it. Some of the ways the federation intends spending this large amount of money turned over to it can be ascertained from the report of the executive committee recently issued. It will employ a man on full time to assist various farmers' associations in their many problems of organization and administration. An up-to-date office will be outfitted and a publicity man employed as soon as funds will permit. Co-operation with the county agents in their program to eradicate bovine tuberculosis and the state department of agriculture for better marketing information has been pledged. The federation will co-operate with the state Co-operative Elevator Association in the employment of a state purchasing agent as well as see what can be done with the aid of Kentucky and Indiana to have an agent in the Cincinnati market to look after the interest of livestock shippers. Other things were mentioned, but this is enough to show that they have fixed upon certain definite projects and can soon show whether it has bitten off more than it can chew or is able to chew fast enough to make a showing. The results will be watched with a great deal of interest in Pennsylvania, because in this state it costs practically nothing to belong to the farm bureau, and murmerings are being heard whether a thing worth while can exist long without those who benefit by it paying something.

Sell for Loss—Hold for Gain

LIBERTY Loan Bonds and Victory Notes are being hard hit on the stock exchanges of the country. The total sales for one day of all classes of these war issues recently on the New York exchange was nearly twenty-eight million dollars. They are selling at considerably below their face value, not because they are worth less, but because so many people want to sell them. No one doubts but what the bonds will be paid in full at maturity and every six months a coupon from them is as good as cash. People have not lost faith, they just need money—more of them, quicker and in larger amounts than the banks will lend it, so they are cashing Liberty Bonds. Wise folks are buying these bonds same as you and us would jump at gold dollars for ninety and eighty-five cents. If you need money and cannot borrow it, don't sell Liberty Bonds, sell something else. Other things are high and they are low. Liberty Bonds are bound, by all the resources of the United States, to go up at least to par, maybe more, but no telling where other things are going in selling value later on.

Boys and Girls Help Stabilize

SECRETARY of Agriculture, E. T. Meredith, has issued a strong appeal to the boys and girls engaged in agricultural club work throughout the United States to make this their banner year. The secretary has faith in the farm boys and girls because he knew through his own club work with them before he went to Washington just what they can accomplish when they set about a task. Taken collectively, it would be hard to express in dollars and cents, and impossible in terms of general worth, just what the boys and girls of this country have done since this idea was started only a few years ago. We are developing a love for and favorable attitude to the farm in thousands of coming useful citizens who would never have received the message if they had to wait until manhood and womanhood for it. Coming country leaders are being developed with the viewpoint of those on the farm rather than being sent out from the cities and town with idealistic thoughts impossible of execution. To quote the secretary's own words in his message to the boys and girls, he says: "It may hearten you to know that many of us here in the Department of Agriculture look upon the boys' and girls' clubs much as Caesar must have looked upon the Tenth Legion or Napoleon upon the Old Guard. The other forces may fail, but we know we can rely on you."

Wilmer Atkinson

WILMER ATKINSON, founder and editor emeritus of the *Farm Journal*, died at his home in this city on May 10th. If he had lived until June 13th, he would have been 80 years of age. Mr. Atkinson had a personality which he so impressed upon his paper that for forty years it became a by-word in farm homes throughout the United States. His "fair play" notice was an innovation in honest dealing between advertiser and subscriber and was the forerunner of the "Truth in Advertising" slogan at present vigorously upheld by the Associated Advertising Clubs of the World. Mr. Atkinson's ancestors came over with William Penn and he has many descendants scattered about Philadelphia. He served in the civil war and afterwards established the first daily newspaper in Delaware. He was an ardent supporter of Womens' Suffrage and interested in many public questions up to the time of his sickness, only ten days before his death.

The Garden in June

W. F. MASSEY

May has been a discouraging month, the first week of cool weather culminating in a heavy frost on the morning of the seventh. Down here in the southeastern corner of Maryland we usually get our early tomato plants set in the garden soon after the middle of April. This spring we had to keep them under the protection of the sashes till the tenth of May so that the coming of June seems more like May than usual.

Tomato plants sown in the cold frames as a succession to the early ones will now be large enough to set, and this is the best time to set tomato plants intended for the canning houses. Plants to make the canning crop should be of the best varieties for that purpose. While pink tomatoes are all right for the summer, the canners want the smooth solid red ones, and I plant for home canning the Success and the Stone. The Stone is grown by our farmers almost exclusively. But too many farmers merely sow the seed in rows in the open ground and transplant them to the field directly from the crowded rows. These plants have very little root development and of course they fall flat and it takes some time to get them into vigorous growth.

If the plants are sown in the cold frame and transplanted as soon as large enough into a bed where they can be protected with cloth if necessary, setting them about 4 inches apart each way, they will make a mass of fibrous roots, and set with the watering machine they will hardly wilt and the crop will be better because of greater vigor in the plants.

As soon as tomatoes are set get the Bordeaux mixture at work. It will be too late when the lower leaves get blighted, for it then will be very hard to check the leaf blight and the leaves will drop one by one, and without healthy leaves you cannot make fine tomatoes. Then what tomatoes are left are fully exposed to the sun and are quickly damaged and worthless.

I spray with Bordeaux mixture as soon as the plants are set and repeat in ten days. In the garden it pays well to set stakes to each plant and train them to single stems. I have demonstrated that I not only get earlier and better tomatoes, but get a better crop on the stakes than on the ground. For home use I plant some pink-skin tomatoes and find that the Globe is about the best.

EGG PLANTS

The first of June is early enough to set out egg plants. If you do not have the facilities for growing the plants you can buy potted plants from the seedsmen. For the average home gardener it is best to do this, for unless you can command a good heat in green house or hot bed the egg plant in its start is a very ticklish thing. Nothing less than 70 degrees at night will do for it and in a greenhouse it may damage other plants to carry so high a temperature.

Strong plants started in a hot bed and potted into 3-inch pots and kept under glass and well watered will be now in fine shape for transplanting. The Black Beauty is the earliest and productive, too, but I always grow some of the New York improved. They are larger than the Black Beauty and are stronger growing. Do not set egg plants where egg plants have been grown in less than three years. Egg plants after egg plants will be sure to get diseased. I had a variety some years ago sent from the Department at Washington named Violette de Bordeaux. It was a long narrow variety and very prolific, but not available for making nice slices and only suited to baking whole. And by the way, a baked egg plant, cut open and buttered and salted and peppered is a very nice thing.

OKRA

Plant the first of the month seed of okra for green pods to make the Gumbo soup. The best variety is the White Velvet or Creole. This makes long, round, smooth pods without ridge that are on all green podded sorts, and does not sting the hands. Plant in rows three feet apart and thin to two feet in the row. It is hardly worth while to plant okra seed earlier than first of June, for it germinates slowly till the soil is warm and then grows slowly till the weather is hot. The tender pods must be cut rapidly before they harden.

BEANS

My method in my own garden is to plant but one row of string beans at a time, as one row forty feet long will keep my family supplied till they get too old. Then when the first planted row is well up and leafed, I plant another, and keep this up till the last week in August. This gives us a constant succession of the most tender pods and plenty to can for the winter.

The lima beans are very apt to be planted too early by amateurs. After the middle of May and up to early June is the best time. A correspondent recently wrote asking what was the matter with his large lima beans. He said they germinate all right and in turning over to straighten the stem it snapped. There was evidently nothing the matter but wrong planting. If the large lima beans are merely dropped and covered they may fall sidewise or on their backs. Then the effort to get the two halves that make the seed leaves above ground, it is easy to see how the stem can be snapped. In planting large limas merely stick the bean in the ground eye down and barely covered. Then when it germinates it will already be in the proper position to grow.

When the beans start they commonly shoot out long stems and do not seem inclined to take to the poles and you will have to go and turn them from left to right around the poles to start them. I plant by a woven wire fence and there, too, we have to train them to start to twine. In our latitude the large white lima bean is rather unproductive and hence we grow more of the small lima or Sieva bean, the butter bean of the South. To my taste the small lima is a far better bean than the large one, and it is far more prolific.

Of climbing beans used for dry beans and string beans, too, the Berger green pod stringless is one of the best. It is an improvement on the old Dutch Caseknife bean, white in color and makes as fine a winter bean as the Navy bean.

CELERY

In the northern section where the late summer and fall crop is grown the plants will already have been set and growing. In the middle states in southern Pennsylvania and southward the celery crop grown should be the early winter crop blanched in earth. Of course we can imitate the planters north and set in close rows and blanch in the fall with boards, but in nine cases out of ten we will have a lot of it rotten in the hot weather. Here just now is the time to transplant the little plants from seed sown in early April. We set them in rows six inches apart and two inches in the rows to get a better root development to make the final transplanting easier and more certain. Then the plants will be ready to set in July in Philadelphia section and August down here.

CUCUMBERS

Cucumbers and all the tribe including melons should have their seed leaves kept dusty as they come through the ground to prevent the striped or the 12 spotted Diabrotica beetles from devouring them. I mix one part of calcium arsenate and two parts of air-slaked lime and not only prevent but kill them. Any fine dust will baffle them, but it is best to kill them, for they will later lay eggs at the base of the plants and the borers will hatch and destroy the plants. For pickles plant cucumbers in well manured hills late in June and cut while small and keep in brine till the needed amount is ready to pickle.

PEPPERS

I grow only the sweet peppers and do not allow any hot ones in the garden, for they will surely get some of their pollen on the bloom of the sweet ones and will make them hot. I prefer to buy pepper sauce than to grow the hot peppers. The best of all sweet peppers is the Pimiento. Potted plants set now will bear abundantly till frost. The pods are smooth and bluntly conical and not wrinkled as other kinds and they are just the best size for pickles. The monster Chinese Giant is a poor bearer and too large for stuffing, and a poor pepper at best.

CABBAGE

The Pe Tsi, or Chinese cabbage, we find very acceptable as a salad plant when the weather gets too hot for good lettuce. We sow in a row and thin out and use the thinnings like lettuce and leave the plants far enough apart to head. Later they are boiled. Sow seed of the Late Flat Dutch cabbage. I like to sow thinly broadcast so that the plants will not be crowded and I can get better plants than from crowded rows. For early fall heading set plants the first of the month of the Improved Brunswick. These will head in September and October.

SWEET POTATOES

In furrows three feet apart spread well-rotted manure in which a due amount of acid phosphate has been mixed. Lap furrow from each side and set the plants on the ridge thus made 12 inches apart. If you like the dry potatoes get plants of the Nansemond, Big Stem Jersey or the Gold Skin. If you want a sweet jelly-like baking potato get plants of the Nancy Hall and Hayman. The Hayman is the earliest and most easily kept in winter. It is rather poor quality in fall and winter, but gets good in spring. Nancy Hall is the best.

This Year's Maple Sugar

Although the prospect of good prices caused farmers to tap slightly more than the usual number of maple trees this year, unfavorable weather reduced the output both in the state and in the country as a whole. According to J. B. Shepard of the U. S. Bureau of Crop Estimates, the United States maple sugar crop this year was only 7½ million pounds compared with over 10 million pounds last year and 13 million pounds in 1918. Maple syrup production was 3 2-3 million gallons, which is ¼ million less than was produced last year and 1 1-3 million less than was produced in 1918.

New York State produced just a third of the total U. S. crop and as producers here received an average of 36 cents per pound for sugar and $2.70 per gallon for syrup, the total value of New York's share was this year over $4,000,000.

The average yield of each tree was about 2 pounds of sugar or one quarter of a gallon of syrup. At this rate the gross return from an acre of woods averaging 50 good maple trees was not far from $35. According to the Department of Forestry of the New York State College of Agriculture about three-fourths of the price of syrup was required this year to cover the value of the fuel used, the cost of the cans, interest and seven per cent. depreciation on the sugar making equipment and thirty cents per hour for the labor of the men employed. Even allowing for team work, taxes and various other expenses, it would seem that at the present prices a good sugar bush is a profitable addition to a farm.

According to a statement issued by Director L. H. Wible, of the Bureau of Statistics, 264,600 gallons of maple syrup were produced in Pennsylvania and sold at an average price of $2.75 per gallon, representing a total value of $727,670. There were 549,440 pounds of maple sugar produced this year and this sold for an average price of 37 cents per pound, the total value being $203,292.

There is scarcely any other farm crop which will respond so quickly to care in seed as the potato. The profit in potatoes depends on good seed, and since it costs as much to grow a poor crop as a good one, use the best potato seed available.

"Lawns and Lawnmaking" is just what its name indicates. The state college of agriculture at Ithaca, N. Y., will send you a copy if you ask for E7.

There were 2654 persons registered at the annual Cornell Farmers' Week held last February.

Protect cabbage, tomato and similar plants from cutworms with a 3 or 4 inch collar of stiff wrapping paper or cheap roofing paper.

Mulching the Small Fruits

MRS. M. G. FEINT

One year we had an abundance of clean oat straw and used it freely for mulching. Strawberries and rhubarb were first to get applications. There was such an immediate let up on the cultivation needed to keep weeds down in the early growing months that this feature alone would make the plan worth while to us, as help is so scarce. In fact my small son and I do practically all the gardening, and if old laborious methods alone were used, our operations would be very limited indeed, as I have a multitude of other duties. We had help with the mulching, however. Besides keeping down weeds, we soon found the straw a great protection from late frosts, and of course the moisture was conserved, feeding the plants continuously and enabling them to make an unusual growth.

Next we tried straw around the raspberries with fine results, and later, on part of the garden. Tomatoes and peppers were found to benefit particularly, setting fruit at a rate never equalled in our experience before. Early potatoes responded particularly well, needing no more hoeing after the mulching at blossoming time. We always have plenty of straw, and hereafter it will be our main labor saver as well as moisture saver with all kinds of small fruits and many of the vegetables. As it rots it also helps to enrich the soil and make it friable.

New York.

Thinning Fruit Saves Trees

Thinning of fruit is sometimes necessary with apples, peaches and plums to insure the production of the highest quality of fruit, according to the horticultural department at the Ohio Experiment Station, Wooster.

An apple tree will often produce sufficient bloom for twenty times the number of apples that it could possibly mature.

In some years the June drop of fruit removes about the right quantity, but at other times it is necessary to thin fruit by hand to prevent the trees from breaking down and to insure well-colored fruit.

For thinning apples, at the Ohio Experiment Station, it has been found that the best time is between 4 and 8 weeks after full bloom. Small shears or the thumb and fingers may be used to clip off the excess fruit.

With peaches and plums, thinning lessens the danger from rot and keeps the trees from breaking. On peach trees a distance of 6 inches may be made between fruits.

Medals for Delaware Corn Growers

The State Board of Agriculture will give a solid gold medal to every farmer in Delaware who grows one hundred bushels of shelled corn per acre this year on a five acre field. These medals are in addition to the very liberal cash prizes. A special gold medal will be given to farmers who have the best acre of seed corn.

The largest cash prize is sixty dollars for the acre yielding the most corn. In addition each county will have prizes of forty, thirty and ten dollars for highest yields of a single acre. The Board is also offering four prizes in each county for high yields of five acre fields, namely twenty-five, twenty, fifteen and ten dollars. The purpose of the Board in offering these prizes is to increase the yields and make Delaware a great seed corn state.

To secure these prizes the farmer should have a well-bred variety of corn, should prepare his ground carefully and make it fertile; should give thorough and frequent cultivation, should secure a regular stand of corn and should plant close enough to have about nine thousand stalks to the acre. The corn may be planted in hills with two or three stalks each, or in drills.

A Rye and Buckwheat Combination

EDW. W. CLEEVES

The farmers on the sandy land of Warren County, New Jersey, sow rye and buckwheat together in June, using about a bushel of buckwheat and a half bushel of rye per acre. This plan saves labor and seed. It gives two crops for one fitting of the land. The rye stools out covering the ground as well as where three or four times as much rye is sown in September or October. The grain yields as well as when sown in the usual way.

This practice could be adapted with profit where a cover crop is needed to follow the buckwheat. It would prevent loss of plant food in the fall and make green manure in the spring.

This plan ought to work with wheat. It is the same principle as sowing winter vetch with oats in the spring and cutting a crop of oats the first year and a crop of vetch the second.

New Jersey.

Cutting Distance Between Producer and Consumer

(Concluded from page 182)

a bushel to the national capital trade when local dealers were asking $3.00 a bushel for similar fruit. A saving of $164.80 obtained from this motor truck load. Shortly after this 206 bushels of Irish potatoes from Warsaw, Va., were marketed at $1.15 a bushel, when the common retail price was $2.25 a bushel, a saving of $226.60 resulting from this consignment. Fifty-three crates of eggs were delivered from Warsaw a few days later which sold for 62 cents a dozen when the Washington market was 75 cents a dozen, the saving in this instance amounting to $206.70. Eighty-six crates of eggs followed shortly thereafter which brought 63 cents a dozen when the retailers were asking 78 cents a dozen. This resulted in a saving of $387 for the consumers. Shortly thereafter the Washington price of fresh eggs went to 90 cents a dozen and a Warsaw truck shipment was delivered consisting of 56 crates which were sold for 72 cents and saved the purchasers $302.40. These results are only typical of thousands of other direct deals which have been conducted in Washington with big savings to the consumers.

Apparently one of the most practical pieces of financing which Congress could promulgate during the next year would be to increase the appropriation of the Post Office Department for its country motor route service, as under the present conditions of skyrocketing food costs facilities of this nature, which strengthen the ties between producers and consumers and favor the practice of direct marketing, merit universal popularization. If farmers and consumers generally consider that this project is worthy of extension and development, now that it has demonstrated its worth over a test period of eighteen months, it is up to them to advise their representatives in Congress concerning their sentiments in this matter. United popular sentiment aptly and forcibly expressed is a fruitful source of gaining desired ends in an affair of this kind.

Virginia.

The value of the 1919 wheat crop in Pennsylvania was estimated at $62,878,987.00, while estimates show that the farmers of this state expended approximately $62,928,575.00 for male farm help during the last year. It appears that it took the value of the crop of wheat to pay for farm help.

The Work Behind The Service

Owing to international conditions, the Bell Telephone System was for two years unable to secure raw materials and equipment. While supplies were thus shut off demands for service increased beyond all precedent.

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New exchange buildings, permanent brick, stone and steel structures, have been erected in many cities; scores of central office buildings have been enlarged; additional switchboards are being installed in all parts of the country; new conduits built; hundreds of thousands of miles of wire added to the Bell service; more than a million new telephone stations installed; and expansion giving a wider range of operation has been ceaselessly advanced.

As the wheat crop gives no bread until after the harvest and milling so you will not have the full fruition of our efforts until construction is complete.

But, a big part of the work is accomplished; the long hard road travelled makes the rest of the undertaking comparatively easy. It is now but a matter of a reasonable time before pre-war excellence of service will again be a reality.

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34x4	9.25	2.60
34x4½	10.75	2.85
35x4½	11.00	3.00
36x4½	11.50	3.10
35x5	12.25	3.20
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Egg Lessons in Color, Size and Quality

F. V. L. TURNER

Out in California they have done more in fifteen years to raise the standard of egg production and prices therefor than the whole East has done since the British concluded the United States were detached from the mother country, or when Cornwallis concluded Yorktown was not a safe playground.

As nearly as can be estimated the world's production of eggs ran around 16 billion dozens for 1919, 20 per cent. of this number being contributed by America. When the armistice was signed the poultry of the Central Powers and Russia had been wiped out, and the first of this year did not find improvement. For 1905 California produced for market about 8 million dozens of eggs and by 1911 she produced double, reaching, in 1917, 32 million dozen.

But there are other things beside increased production—in particular there is not any wonderment at increased production. More interest centers in the fact that price has followed the pace set by quantity yielded. Ordinarily any business thrives best on increased output at the same price standard. In the ten-year period up to 1917 California eggs averaged 27 cents per dozen and in 1919 the average jumped to 49½ cents. Hen investment jumped from $2.75 each to $5.50 each and net profit ran from 65 cents to $1.30. By far the greater story comes in the fact that the California egg reaches New York, last year going over $1.00 per dozen. Why?

California produces but 6 per cent. of all the egg output of this country for market purposes. To use the language of a California egg statistician, "Of these, 5 million dozen are exported, chiefly to Alaska, New Mexico and New York City. The fall and winter eggs shipped from the Petaluma district to New York City are of such superior excellence that they sell without price discrimination in competition with the highest grade of fancy eggs listed by the New York Mercantile Exchange."

California has done two things that have put her eggs in actual equal competition with any eastern eggs; first she bred up her hens to lay good-sized marketable eggs; second, she increased her average per hen from 100 to 120 eggs a year. When California pulled herself together on the egg game she realized that 8½ dozen eggs per hen in a year at 27 cents per dozen was profitable to a minor degree only. She straightway bred better layers of better eggs that at least equalled any egg product in this country.

Strange as it may seem poor eggs go to eastern markets in such quantities that the average price is pulled down materially—poor eggs in many senses, in freshness (staleness), in cleanliness and in mixed colors.

Held eggs are the more numerous; when these eggs are finished by the candler the loss per case lowers the per dozen price disastrously. "Dirties," as they are officially dubbed, are more than eggs laid in dirty nests, on the ground, in the same nest with a broody bird or in any out of the way place that never receives attention. Shavings, leaves or straw, and, if nothing better can be had, orange boxes, old egg crates or berry crates, will stop the loss from dirty eggs. If the producer insists upon mixing two or more colored shells he must take the loss—white and yellow or white and dark brown are no more widely apart than yellow (buff) and brown.

It seems incredible that the East should be so far behind the West in the matter of making attractive its products. The bulk of success hangs upon optically pleasant, first, and upon condition, freshness, second, and eggs can be either highly beautiful, as eggs go, or decidedly repulsive.

Whitewash for the Hen House

Some wiseacres who know nothing about it claim that chickens are senseless creatures; but ask the poultryman who knows them best, and he will tell you that his birds have many traits not unlike human beings. One which can well be borne in mind when preparing a summer house for the pullets is the effect on growth and general well being of a cheerful and clean environment. Damp, dark surroundings are bound to react unfavorably on the growing birds. It is not difficult to remedy this condition and the results are more than worth the trouble.

A good disinfectant whitewash is easily made and applied and will work wonders with the inside of the house. The following formula is recommended by the Poulty Department of the New Jersey Agricultural College: Five parts cream of lime (by volume), half part some good disinfectant, one part kerosene and six and one-half parts water.

Cream lime is made by slaking fresh stone lime with boiling water and thinning to the consistency of cream. Add a pound of lard to every five pails and a cup or so of salt, to help make it stick well. Apply with a force pump, putting on the coating as evenly as possible. Kerosene will destroy red mites, the disinfectant will do away with disease germs, and the whitewash will lighten the interior and make it more cheerful. If an application is made at the beginning of the season, it will last all summer.

Hen's Time Valuable

A hen should spend her time in either laying eggs or hatching chicks. Feed is too valuable just now to be wasted on a hen that sits around the poultry house spoiling eggs, declares J. B. Hayes, of the poultry department of the University of Wisconsin.

Broodiness can most quickly be overcome by breaking up the hen as soon as she begins to act broody. Build a coop about 30 inches high in a protected, shady place with a bottom made of 1-inch mesh wire or slats. This coop can be raised from the ground by placing it on legs or resting the ends on saw horses.

Remove from the poultry house each night all the hens that show signs of broodiness and place them in the coop. The impossibility of finding a warm nest soon discourages them and they will get back to laying

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Present Outlook for Dairying

OUR EXPERIENCE POOL

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TOPIC No. 1294, JULY 1.—What has been your experience with paints and painting for the farm buildings? Do you use ready mixed paint or make your own with white lead and oil? What colors seem to suit best for house and barn? Any little helps you have found in doing a quicker or better job will be appreciated by someone about to beautify their property with a coat of paint.

TOPIC No. 1295, JULY 15.—It is none too early to plan for selling the year's crops. Have you found wagon or stock scales to be an advantage? Do you sell with neighbors or make the best bargain you can by yourself? Do you have difficulty getting cars to ship hay, etc.? What advantage has a motor truck been to you?

B. B., Tully, N. Y.—Farm labor is so scarce and feed so high and the milk business in such a turmoil so much of the time that a number of large dairies around here have been sold. The farmers had a nice cheese factory in a small village here until a year ago, but they could not pull together. When milk was a few cents higher than cheese prices netted, some with larger dairies left the factory and sent milk to the shipping station a few miles away, with the result that the factory could not be made to pay and has been discontinued. Now two large auto trucks run down the line on the state road to the shipping station and pick up the milk along the way and that from side roads that is brought to them. Many farmers farther back make butter and fatten calves. The loss of the cheese factory has hurt the most. Some who have separators take the cream to a creamery in another village, a few miles distant, going about three times a week. There have been several milk strikes around here and there was some talk of one this year if the price went too low, but it has not materialized as yet. On the whole the outlook for dairying is much more unfavorable than it has been for some time.

M. T. M., Mitchell, Va.—This, the Piedmont section of Virginia, is well suited for dairying, and as we are near a good market, we receive fairly good prices for our milk. We have good pastures and long grazing seasons. Every year a few more farmers in this vicinity go into the dairy business, though of late a great many dairymen have disposed of their entire herds, owing to the labor situation. Hired help in this community is very irregular, incompetent and prefers field work to dairying. Our best hired man left us recently to work in a factory at six dollars per day; of course, a dairyman cannot afford to pay such wages. Last fall we were compelled to dispose of half our herd on account of the labor situation. This summer, for May, June, July and August, we shall receive thirty-six cents a gallon for milk testing 3.5 per cent. butter fat. Our milk usually tests much higher than this as we always feed from eight to ten young calves, hence we use a separator and add the surplus cream evenly in the various cans, thus we shall receive about thirty-nine cents per gallon considering we are paid an extra cent and a half a gallon for our barn score. Last winter our milk brought us forty-nine cents a gallon. Though in my opinion we made more clear money five years ago off dairying than we do now. Concentrates are higher than ever, labor more expensive; then more time must be spent in the dairies in this section when the milk is shipped to the Washington markets, as the regulations there are very strict, hence less time can be spent in the fields. Our crops have been reduced greatly the past few years, yet with these drawbacks we are greatly interested in our herd of cows and the regular monthly milk check can be depended upon.

W. H. H., Needmore, Pa.—Dairying in our locality is quite different from that of most places, as it is fourteen miles from a railroad station. No milk is sold, but separators are extensively used, and the skimmed milk fed to calves, hogs and poultry. The butter is sold to our local merchant, hucksters, or shipped to the city by parcel post (the parcel post being of great advantage to us since it is such a distance to a railroad station). Herds are being increased every year. There are a great many more cattle in the county than there were five years ago. At that time butter was sold at about 30 cents per pound, at present it is about 42 cents. The calves, pigs and poultry to which the skimmed milk is fed must be considered under our circumstances. Five years ago veal calves sold for eight cents a pound, whereas now they are bringing thirteen cents. Hogs then brought eight cents a pound and are now fifteen cents. Chickens sold five years ago for fifteen cents a pound and now bring twenty-four cents. Eggs now bring forty cents a dozen whereas five years ago we could only get half that.

C. C. C., Jr., Penn Laird, Va.—The outlook for dairying in this section, while fair, is not as promising as we might expect, judging from the recent decrease in dairy herds of from one to five or more cows. Ask any farmer or dairyman why he decreased his herd and the answer invariably is "the price of dairy products does not justify the high cost of wintering my cows." Now that spring has arrived, bringing cheaper food in the way of grazing, most farmers and dairymen are retaining the cows wintered, but all seem to agree that, unless conditions change by next winter, they will sell off the entire herd rather than swap dollars with a lot of hard work thrown in, as they did last winter. Creameries here are paying 26 cents per gallon for milk and 42 cents per pound for butterfat.

Many farmers are finding it more profitable to separate the cream on the farm, make butter and sell it at neighboring towns. Strictly clean, palatable butter is bringing from 50 to 60 cents per pound delivered in the towns once per week. A great many farmers are catering to this trade, which is growing rapidly, and the prospects are that more and more of our dairy products will find a market at home unless conditions change. All summed up, dairying in this section has been given a backset that is quite perceptible and unless conditions elsewhere are vastly different to conditions in this section, someone, somewhere, sometime, who does not produce dairy products, will be awfully glad to get them at most any old price.

E. M. A., Ashville, N. Y.—The dairy outlook here seemed black some time ago, but it couldn't have been or it could have got no darker, and it has, considerably. If a herd anywhere is being increased, it is for some specific reason, and I know of only two such cases—one renter bought a farm last year and sold his dairy to apply thereon; I don't think he is buying cows, although he is allowing his young stock to grow up. Another man has run a milk route for years, but the dairies are reduced or sold entirely until he has no route and he is gathering up some cows of his own. Cows bring less at auction than they did some time ago and one of our largest dairymen, with a fine registered herd, said recently that anyone who would pay his feed bill was welcome to his cows.

The whole milk is still shipped to the city—when nothing prevents. It brings about $2.50 per hundred pounds. I don't remember the price five years ago, but at that time most farmers here were sticking to their jobs; they thought they couldn't farm without cows, whereas now they are learning that they can't farm very profitably with them. One man tried renting, but when this renter saw the job that was before him he committed suicide, and the owner had to come back to look after his cows himself this spring. He couldn't find another renter and he is a good man with a good farm, and good registered dairy, too. Of course, the cows may not have been entirely responsible for the suicide, but a good many of us consider having a big dairy on one's hands to be a good and sufficient reason in these days. I believe that renter didn't survive a whole month. If anyone suggests that I shouldn't make light of such things, let me tell him that I'm not; I'm summing up the dairy situation in all seriousness and as accurately as I know how. This used to be essentially and primarily a dairy section; now it's a workin-out section and a going-to-town section. One of our former dairymen is a grain farmer now, another is a merchant, some are agents, and many are shopmen. Personally I never could like the city for a home. A house and garden in the country is nice for a sort of "headquarters" but, beyond that, the less one owns the better, under the present system. Perhaps some day we'll all be commuters; the country is the place to bring up children, but most emphatically not the place to make a living for them.

J. U., La Fargeville, N. Y.—The outlook for dairying in this section is not bright. The price of milk has been reduced and feed and labor are high. The herds are not being increased and the only reason that they are not being reduced is that no one seems to want to buy any cows. The farmers generally will keep those which they have till fall and get what they can out of them without feeding any high-priced grain, and then there will be a lot of cows sold unless conditions look better than at present.

The milk is sold at a base price of $2.50 a hundred and extra pay for butterfat, making an average of about $2.70. This is at stations where the milk is shipped to New York City. At the factories much milk is made into cheese, both American and Dutch or Limburger. The farmers get a little less money but get some whey and do not have to draw the milk so far as to the station.

Taking the situation as a whole, the prospects are not as good as they were five years ago. In some cases the farmers are getting a little more clear money, but it will not buy as much as then, and in most cases they are not getting any more profit than they formerly did, for it takes a lot of milk to pay for feed and labor.

The milk shipped from here is sold to the Borden Condensed Milk Co., and while this is a good company to deal with, it is necessary for the farmers to buy and equip cheese factories at what may be called stragetic points, that is where they can handle the most of the milk for themselves, in case the company does not pay the price the farmers ask.

J. W. R., Carbondale, W. Va.—The dairying situation in our neighborhood is not very encouraging. While the present conditions are generally better here than they were five years ago, especially in regard to the prices for cream and butter, yet dairymen hesitate to increase their herds as the cost of feed and help is almost prohibitive. I know of a few small dairymen who raise most of their feed and who do not employ any help, that are making money selling cream. They feed the separated milk to their hogs and sell it to customers in town. A few up-to-date dairymen in Fayette and Kanawha counties are studying the dairy question closely and they hope to find a solution to the vexing problems of high-priced help and still higher dairy feeds. We hope that they may be able to stay in the business as they are certainly hard-working and worthy citizens.

J. E. F., Wellsboro, Pa.—The outlook for dairying in this locality is not very good. The majority of the farmers are just about disgusted. Many are selling off their cows (when they can find sale for them) and many more are selling their farms when possible. Very few farmers are increasing their herds. Most of them want to sell out. The milk is sold whole to a condensary. Our milk brings us $2.56 net on the farm for May, a fraction over 5 cents per quart, and feed $3.75 per hundredweight. When a pound of milk won't buy a pound of feed it is time for the farmer to think of some other line of work. Five years ago a pound of milk bought nearly two pounds of feed.

Will say it is a mighty deep problem to know just what to do in the future. We have been producing milk at a loss for nearly seven months and are just about disgusted, and will say, unless milk dealers pay farmers better prices, and that soon, the United States will face a milk famine.

Movies of the Apple Industry

Pennsylvania ranks third in the United States in the production of apples despite the extravagant claims of the apple growing states of the Northwest. But due to poor methods employed by the orchardists it stands sixth in the production of commercial apples.

To educate the orchardists of the state to the needs of scientific methods in spraying, pruning and the general care of the trees, the Pennsylvania Department of Agriculture is portraying, in moving pictures, the complete story of the apple industry.

The first nineteen scenes of the films have already been photographed in the apple belt in Erie county. These deal with old orchards that have been headed back, young orchards improperly pruned, methods of cultivation, spraying and tree diseases.

The Adams county fruit belt will be visited later in the summer and the progress of the apple industry will be followed until fall, when the apples are picked and stored. The pictures are being taken under the direction of Prof. J. G. Sanders, director of the Bureau of Plant Industry, Pennsylvania Department of Agriculture.

Standards and averages are all right, but for the individual it is the extra hour of labor and the extra bushel of wheat to the acre which bring the profit.

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address

WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JULY 1.—Not all of us are in position to have ice all summer for keeping our food cool and sweet. How do you manage if you are one of the unfortunates? If you do have ice and a refrigerator tell us of any ways you have found to make it last as long as possible.

JULY 15.—Tell us about some nice cooling drinks for the hot days and nights. Shall we still serve hot coffee with each meal? If not what do you find makes a good substitute.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Planning the 4th of July Celebration

(Miss) E. J. S., Grottoes, Va.—What shall we do this year to celebrate the Fourth of July? I was asked this question several days ago, and as I think of the many ways we have already celebrated this event, it seems the most enjoyable were the patriotic programs rendered at one of our country churches.

These programs, which consisted of addresses, orations, essays, recitations and special music, were interesting from start to finish, and lasted through the day. The best thing about these community celebrations was that everybody took part, from the addresses, songs, etc., by the older ones, to the recitations and exercises of the little girls and boys. Then there was the gorgeous dinners prepared by our mothers, which were served in a grove nearby.

What a time we had, eating chicken, ice cream, cake and other good things too numerous to mention, while we chatted with our friends. Everything was free, too, and if folks didn't get enough to eat it was probably because they were too bashful.

Isn't this a much better way than going to some kinds of frolics, just to see and be seen (the only object for going), and where you buy things, paying twice as much as they are really worth? Is that patriotism?

One year a small crowd of young people went on a sightseeing trip to the mountain, a distance of about twenty miles. We climbed to the top, viewed the surrounding country, took kodak pictures, and at noon ate our lunch at a well-known spring. None of us will forget our mountain climbing experience that Fourth of July.

Mrs. G. S. D., Denton, Md.—I think the best possible kind of a community celebration would be to get together and plan a grand picnic for the children, especially the poor children. Those who have autos and teams could give the use of them for the day and carry the children to some place where they can have swings, boating, bathing, games, baseball, and a good time generally. Fireworks make a pleasant finish if they are not too expensive. For the lunch, let the Sunday schools unite in appointing a soliciting committee to ask for lemons, sugar, bread, butter, meat, etc., from the merchants, and another lunch committee see the women and get them to prepare it. Perhaps the local ice cream dealer would furnish ice cream at cost, or better, possibly individuals might make some. Those children who can do so might take a lunch, but let all share in the good time. Let there be enough older people to take care of the children, to avoid accidents, and see that all have a good time. It might be a strenuous day for them, but the pleasure of the children would repay. Be sure to let the mothers and teachers, who have the care of them at other times, have a rest for once. I think this could be worked out to make a truly "safe and sane" Fourth.

Mrs. E. M. A., Ashville, N. Y.—In a rural district, where I taught several terms of school and where I still visit sometimes, the community has an established custom of meeting at the school house for a Fourth of July picnic every year. The school has a nice maple grove just about large enough to accommodate the immediate neighborhood and it is within easy walking distance for them all, though they don't always walk because they carry well-filled and rather cumbersome baskets. I believe they all contribute toward materials for fireworks and take turns entertaining the bunch in the evening. I suppose accidents are less likely to occur with all the fathers and mothers present, though as a matter of fact, several middle-aged couples in that crowd have no children. I never have attended one of these gatherings, but, judging from their own reports, I think the entire company become children for the time being and it would be a nice thing if more of us had the same faculty. One of the nice things about that neighborhood, anyway, is its adaptability of all ages to all occasions. As a rule everyone goes to everything, from the babies to the grand parents, and all have a good time together. In other sections I have noticed the old people are always very welcome, but they seldom get out, while in this section they have no very old people—perhaps that accounts for the difference. The only elderly couple there, used to get out, and now that they are no longer able to do so the neighbors sometimes come to their house for their good times.

Mrs. W. H. H., Needmore, Pa.—Our Fourth of July celebration is usually planned and looked forward to weeks in advance of its occurrence. We live quite a distance from any town and therefore we are left to arrange a community affair in which we all like to take part. We usually make sort of a picnic out of it, and every little tot seems to enjoy it as much as the older folks. We never have any dangerous fireworks of any kind, but such things as confetti, gum balloons, canes, or any of a dozen other harmless things can be had, as there is usually some one at our gatherings who has them for sale.

Our celebrations on this eventful day are usually held in a grove near a church, a program is arranged, including mostly children, who sing, recite, etc. Several speakers from other districts are usually with us who in turn give us a short and interesting address. Our local pastors are always present, who, I am sure, enjoy taking part in it.

The village band is hired for the day, which the children enjoy very much, for what child does not love music. A platform, which serves as a pulpit, is put up and beautifully decorated with flowers and evergreens, on this is the organ, the choir, and all those who take part in the recital; temporary benches are made out of rough boards, at least enough to seat the women who have small children.

Ice cream, cakes, candy, peanuts, etc., are always for sale on the grounds. Nearly every family takes an abundant lunch and all those who have not brought any never need go hungry. Everyone enjoys this eventful day immensely, yet is of no great expense to anyone.

Homespun Yarn from Ithaca

Even the kitchen sink trap needs an occasional bath. This is the way: Flush the sink with at least a gallon of hot water. Then, while the pipe is still warm, pour in one-half cupful of kerosene. Let this stand for five minutes or longer, and then flush again with more hot water.

A hardwood floor in the kitchen is fine, but it's powerful hard to stand on all day at the ironing-board. Why not fold up a rug and stand on that?

His wife goes by at forty miles
In his new car—but mine just smiles;
Our house has pipes and everything—
His wife totes water from the spring.
—*Plowshares.*

Spare the brush and spoil the teeth; tooth brushes are cheaper than dental work.

The housewife who puts down eggs when prices are relatively low will worry less about dollar eggs next winter.

The electric iron is most likely to "go bad" because of a break in the wire where it joins the connection plug at the iron. Anyone can even the two wires and make a new connection.

The exterior as well as the interior counts in making homelike homes. Have you the bulletin on home surroundings published by the state college at Ithaca, N. Y.? If not, ask for F 96.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send 15 cents for each. Address FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILAD'A PA

9657.—Ladies' waist. Cut in sizes 36, 38, 40, and 42 inches bust measure. This becoming ruffle-trimmed blouse adopts the new oval neckline.

9654.—Ladies' house dress. Cut in sizes 36, 38, 40, and 42 inches bust measure. The skirt of this house dress is three-gored and fitted across the front.

9656.—Ladies' shirtwaist. Cut in sizes 36, 38, 40 and 42 inches bust measure. To be slipped over the head is this shirtwaist with a convertible collar.

9652.—Girls' and child's apron and cap. Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. The little pinafore has a sash and an applied section across the front to form pockets.

8449.—Girls' Empire dress. Cut in sizes 6, 8, 10, 12 and 14 years. High of waistline is this practical style with saddle pockets at the side.

9642.—Ladies' and misses' dress. Cut in sizes 16, 18 years, 36, 38 inches bust measure. This dainty summer frock crosses its organdie collar in surplice effect.

9649.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. The front gore is cut to form the graceful cascade drapery when it is joined to the back gore.

9655.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30, and 32 inches waist measure. Slashed pockets are finished off with applied trimming-pieces.

9663.—Ladies' one-piece apron. Cut in sizes 36, 40 and 44 inches bust measure. This splendid cover-all apron is made on very simple lines having the back, front and sleeves in one.

Our Latest Fashion Book

Owing to the number of departments in The Practical Farmer, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA

SUNNY SLOPES

By Ethel Hueston

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Author of Prudence of the Parsonage, etc.

CHAPTER XX

LITERARY MATERIAL

Connie wanted to see something out of the ordinary. What was the use of coming to the wild and woolly if one never saw anything wilder than a movie of New York society life, or woollier than miles of properly garbed motorists driving under the guidance of blue-coated policemen as safely and sanely as could be done in Chicago.

It was Julia who came to the rescue. She discovered on a neighbor's porch, and with admirable socialistic tendencies appropriated, a glaring poster, with slim-legged horses balancing themselves in the air, not at all inconveniencing their sunburned riders in varicolored silk shirts.

"Look at the horses jump over the moon," she exulted, kissing a scarlet shirt in rapture.

Upon investigation it turned out to be an irresistible advertisement of the annual Frontier Days, at Fort Morgan. Carol explained the pictures to Julia, while Connie looked over her shoulder.

"Do they do all it says?" she asked.

Carol did not know. She had never attended any Frontier Days, but she imagined they were even more wonderful than the quite impossible poster. Carol's early determination to adore the Westland had become fixed habit at last. It was capable of any miracles, to her.

"How far is it up there?" pursued Connie, for Connie had a very inartistic way of sticking to her subject.

"I do not know. About a hundred miles, I believe."

"A nice drive for the Harmer," said Connie thoughtfully. "How are the roads?"

"I do not know, but I think all the roads are good in Colorado. Certainly no road is impassable for a Harmer Six with you at the wheel."

"I have a notion to drive up and see them," said Connie. "Literary material, you know."

"I want to see the horsies fly, too," cried Julia quickly.

Carol thought it might do David good, and David was sure Carol needed a vacation. They would think it over.

Connie immediately went downtown and returned with a road guide, and her arm full of literature about frontier days in general. Then it was practically settled. A little distance of a hundred miles, a splendid car, a driver like Connie! It was nothing. And Carol was so excited getting ready for their first outing in the years of David's illness, that she forgot his medicine three times in succession, and David maliciously refused to remind her.

They all talked at once, and agreed that it was very silly and dangerous and unwise, but insisted it was the most alluring, appealing madness in the world. David, for over three years limited to the orderly, methodical, unstimulating confines of a screened porch, felt quite the old-time throbbing of his pulse and quickening of his blood. Even the doctor waxed enthusiastic. He looked into David's tired face and said:

"I think it will do him good. It can not do him harm."

In the excitement of getting ready for something unusual, he developed an unnatural strength and simply could not be kept in bed at all. He slept soundly, ate heartily, and looked forward to the trip in the car so anxiously that to the girls it was really pitiful.

Then came a glorius day in September when the Harmer Six stood early at their door, the lunch basket and suit-cases were carefully arranged, and they were off,—off in the beautiful Harmer,—off to the country,—to the mountains and canyons,—to climb one of the sunny slopes that had beckoned to them so enticingly. Almost they held their breath at first, afraid the first creak of the car would waken them from the unbelievable dream.

Always as they climbed a long hill, Carol reminded them that they were climbing a sunny slope that would lead to a city of gold at the top, a city where everything was happy and bright, and there was no sickness, no sorrow, no want. And looking ahead to the spires of a little village, nestling cloudy and blue on the plains, she vowed it was the golden city, and they leaned forward to catch the first sparkle of the diamond-studded streets. And when they reached the city itself, little, ugly, sordid,—a city of gold, perhaps, to those who had made a fortune there, but not by any means a golden city of dreams to the Arcady travelers,—Carol shook herself and said it was a mistake, she meant the next one.

Rooms had been engaged in advance at the Bijou, on the ground floor, for the sake of David's softened muscles, and they reached the town ahead of the regular Frontier Day crowds, allowing themselves plenty of time to get rested and to see the whole thing start.

Julia frolicked on the wide velvety lawn with all the dogs and cats and children that could be drawn from the surrounding neighborhood. David sat on the porch in a big chair, enjoying the soft breezes sweeping down over the plains, looking through half closed lids out upon the quiet shaded street. Carol crouched excitedly in another chair beside him, squeezing his hand to call attention to every sunburned picturesque son of the plains that galloped down that way. But Connie, with the lustful eyes of a fortune-hunter walked up and down the corridors, peering here and peeking there, listening avidly to every unaccustomed word that was spoken,—getting material.

Quickly the hotels were filled to capacity, and overflowed to cots in the hall, rugs on the porches, and piles of straw in the stables. The street so quietly peaceful on Sunday, by Wednesday was a throbbing thoroughfare, with autos, wagons and horses whirling by in clouds of dust. The main street, a block away, was a noisy, active, flourishing, carnival city, with fortune-tellers, two-headed dogs, snake-charmers, minstrels and all the other street-fair habitues in full possession. A dance platform was erected on a prominent corner, and bands were brought in from all the neighboring towns on the plains.

Connie was convinced she could get enough material to last a lifetime. No detective was hotter on the scent of a trail than she. Never two cowboys met in a secluded corner in the lobby to divide their hardly earned coins, but Connie sauntered slowly by, catching every word, noting the size of every coin that changed possession. No gaily garbed horseman could signal to a girl of his admiration, but Connie caught the motion first, and was taking mental notes for future coinage. They were not people to her, just material. She loved them, she reveled in them, she dreamed of them, just as a collector of curios gloats over the treasures he amasses. She classified them in a literary note-book for her own use, and kept them on file for instant reference.

When they went to the fair grounds, early, in order to secure a comfortable seat for David where he should not miss one twist of a rider's supple body, they were as delighted as children truanting from school. It was the most exhilarating thing in the world,—this clever little trick on the sleeping porch and the white cot, on eggnogs and beef juice and buttermilk. No wonder their faces tingled with excitement and their eyes sparkled with delight.

Connie was surprised that the girls were pretty, really pretty, with pink and white skin and polished finger nails, those girls in the silk blouses and khaki shirts, those girls with the wide sombrero and the iron muscles, who rode the bucking horses, and raced around the track, and did a thousand other appalling things that pink-skinned, shiny-nailed girls were not wont to do back home. They stayed at the Bijou, a whole crowd of them, and Connie never let them out of her sight until they closed their bedroom doors for the night. They talked in brief broken sentences, rather curtly, but their voices were quiet and low, and they weren't half as slangy as cowgirls, by every literary precedent, ought to be. They were not like Connie, of course, tall and slim, with the fine exalted face, with soft pink palms and soft round arms. And their striking saddle costumes were not half as curious to Fort Morgan as Connie's lacy waists, and her tailored skirts, and her frilly little silk gowns. But they were more curious to Connie.

She tried to picture herself in a sombrero like that, with gauntlets on her hands, and with a fringed leather skirt that reached to her knees, and with a scarlet blouse and a yellow silk belt,—and even her distinctly literary imagination could not compass such a miracle. But she was sure if, she ever could rig herself up like that, she would look like a dream, and she really envied the cowgirls, who leaped head first from the saddle but always landed right side up.

People of another world, well, yes. But there are ways of getting together.

Connie talked very little that first afternoon. She watched the people around her, and listened as they discussed the points of the horses, the cowgirls and the jockeys with equal impartiality. She heard their bets, their guttural grunts of disapproval with the judges' decisions, their roars of satisfaction when the right horse won. She watched the cowgirls, walking unconcernedly about the ring, flapping their riding-whips against their leather boots. She watched the lithe-limbed cowboys slouching not ungracefully around the nervous ponies, waving their hats in greeting to their friends, calling loud jests to their fellows in the cowboy band. How strange they were, how startingly human, and yet not a thousand-miles removed.

Connie rebelled against it. They were folks. And so was Connie. The thousand miles was a barrier, an injustice. In order to handle literary material, she must get within touching distance of it. All those notes she had collected so painstakingly were cold, inanimate. In order to make of folks she must touch them, feel them, must know they lived and breathed as she did. Why couldn't she get at them,—folks, plain folks, and so was she. A slow fury rose up in her, and she watched the great events of the afternoon with resentful eyes. Even when a man not entered for racing, swung over the railing into the center field, and scrambled upon the bare back of King evil, the wild horse of the plains which had never yielded to man's bridling hand, and was tossed and dragged and jerked and twisted, until it seemed there could be no life left in him, yet who finally pulled the horse almost by brute force into submission, while the spectators went wild, and Julia screamed, and Carol sank breathless and white into her seat, and David stood on the bench and yelled until Carol pulled him down,—even then Connie could not get the feeling. She wanted to write these people, to put them on paper, and she couldn't, because they were not people

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to her, they were just "Good points."

Afterward, when they slowly made their way to the car, and drove home to the Bijou again, Connie was silent. She saw David comfortably settled in the big chair in the sunny corner of the porch, with Carol beside him and Julia romping on the lawn. Then she walked up and down in front of the hotel. Finally she came back to the corner of the porch.

"David," she said impetuously, "I've got to speak to one of them myself." She waved a hand vaguely in the diraction of the fair-grounds.

"One of them?" echoed David.

"Yes, one of those riders. I want to see if they can make me feel anything. I want to find out if they are anything like other folks."

David looked up suddenly, and a smile came to his eyes. Connie turned quickly, and there, not two feet from her, stood "One of them," the man who had ridden King Devil. His sombrero was pushed back on his head, and his hair clung damply to his brown forehead. His lean face was cynical, sneering. He carried a whip and spurs in one hand, the other rested on the bulging hip of his khaki riding trousers.

Connie stared, fascinated, into the thin, brown, sneering face.

"How do you do?" he said mockingly. "Isn't it charming weather?"

Connie still looked directly into his eyes. Somehow she felt that back of the sneer, back of the resentment, there lay a little hurt that she should have spoken so, classed him with fine horses and cattle, him and his kind. Connie would make amends, a daughter of the parsonage might not do ungracious things like that.

"I beg your pardon," she said, sweetly, unsmilingly, "I did not mean to be rude. But the riders did fascinate me. I am spellbound. I only wished to see if the charm would hold. I have not been in the West before this." She held out her hand, slender, white, appealing.

The man looked at her curiously in turn, then he jerked off his sombrero and took her hand in his. There was the contact, soft white skin of the city, hard brown hand of the mountain plains, and human blood is swift to leap in response to an unwonted touch.

Connie drew her hand away quickly, but his eyes still held hers.

"Let me beg your pardon instead," he said. "Of course you did not mean it the way it sounded. None of my business, anyhow."

"Come on, Prince," called a man from the road, curbing his impatient horse. But "Prince" waved him away without turning.

This was a wonderful girl.

"I—I write stories," Connie explained hurriedly, to get away from that searching clasp of glances. "I wanted some literary material, and I seemed so far away from everything. I thought I needed the personal touch, you know."

"Anything I can tell you?" he offered feverishly. "I know all about range and ranch life. I can tell you anything you want to know."

"Really? And will you do it? You know writers have just got to get material. It is absolutely necessary. And I am running very short of ideas, I have been loafing."

He waited patiently. He was more than willing to tell her everything he knew, or could make up to please her, but he had not the slightest idea what she wanted. Whatever it was, he certainly intended to make the effort of his life to give her.

"I am Constance Starr," said Connie, still more abashed by the unfaltering presence of this curious creature, who, she fully realized at last, was quite human enough for any literary purpose. "And this is my brother-in-law, Mr. Duke, and my sister, Mrs. Duke."

"My name is Prince Ingram."

David shook hands with him cordially, with smiling eyes, and asked him to sit down so Connie might ask her questions in comfort. They all

(Continued on page 192)

Protein Supplements to Corn for Swine

W. H. TOMHAVE

In order to secure information concerning the value of several different protein materials for supplementing corn in fattening swine it might be interesting to note a summary of results obtained in two feeding trials at The Pennsylvania State College during the seasons of 1918 and 1919. The supplements used were tankage, fish meal, oil meal, and semi-solid buttermilk. Five lots were fed during each trial, four of which were confined to quarter-acre rape pasture lots, while a fifth was fed in dry lot in order to compare dry lot and pasture for fattening.

Lot I was fed corn meal and tankage in the proportion of 12 to 1 and rape pasture.

Lot II was fed corn meal and fish meal in proportion of 11.5 to 1 and rape pasture.

Lot III was fed corn meal and oil meal in the proportion of 6 to 1 and rape pasture.

Lot IV was fed corn meal and semi-solid buttermilk in the proportion of 3 to 1 and rape pasture.

Jap's Mertha Lass, a high producing New York Jersey

Lot V was fed corn meal and tankage in the proportion of 10 to 1 in a dry lot.

Hand feeding was followed in all lots. The initial weight per pig during the first trial was 83.0 pounds, while for the second trial the initial weight was 65.0 pounds. The pigs used during the first trial were of a more desirable weight for finishing purposes and made heavier gains than the lighter pigs used during the second trial.

The average daily gain for the two seasons in the individual lots is of interest. Lot I made a daily gain per pig of 1.72 pounds during the first trial, and 1.41 pounds during the second trial. Lot II made a daily gain per pig of 1.82 pounds during the first trial and 1.52 pounds during the second. Lot III made a daily gain per pig of 1.51 pounds during the first trial and 1.50 pounds during the second. Lot IV made a daily gain per pig of 1.46 pounds during the first trial and 1.49 pounds during the second. This is the only lot in which a higher gain per day was made during the second trial. Lot V (dry lot) made a daily gain of 1.33 pounds during the first trial, and a daily gain of 1.13 pounds during the second trial.

The grain feed required per hundredweight of gain in the case of Lot I was 334 pounds and 346 pounds; Lot II, 331.0 pounds and 324.7 pounds; Lot III, 363 pounds and 349.1 pounds; Lot IV, 411.0 pounds and 365.6 pounds; Lot V, 398.0 pounds and 383.7 pounds respectively for the two trials, 1918 and 1919.

The forage cost per lot was $5.86 each season, due to the fact that the same area was used each season, the same forage crop, and the labor for seeding, etc., practically the same each season. The cost of forage is high, due to the fact that considerable labor was required in seeding small one-fourth acre lots. The forage cost per hundredweight gain in each lot, of course, varied according to the gains made.

The feed cost, grain plus forage per 100 pounds gain in the lots, ran as follows: Lot I, $11.88 and $13.07; Lot II, $11.60 and $12.36; Lot III, $12.14 and $12.89; Lot IV, $15.56 and $14.55; Lot V, $13.74 and $13.76, respectively, for the seasons of 1918 and 1919. The corn and tankage, and corn and fish meal lot proved to be the lowest in feed cost each time, while the buttermilk and corn lot proved to be the highest.

The initial value for all lots was placed at $20.00 in 1918, and $18.00 in 1919. The selling price for all lots was $17.80 per hundredweight in 1918. At this figure, all lots returned a profit. In 1919, the hog market was at the lowest point at the time it was necessary to dispose of the pigs, and as a result but $13.26 was received per hundredweight. At this figure, all lots were fed at a loss, since the pigs were high in value at the beginning of the experiment; also, feeds were extremely high in price. The comparative profit or loss returned from lots, above feed costs, runs the same for the two years, however.

The value of forage was demonstrated both years in the comparative returns from Lots I and V. The value of fish meal for fattening purposes showed up well in both trials.

The returns from Lot III are not as great as on Lots I and II. In this lot where oil meal was fed, there seemed to be a great tendency for the pigs to root up the forage, showing that the pigs had a craving for more mineral matter than the oil meal and corn supplied. In the semi-solid buttermilk lot the cost of production ran much higher than any other, due to the large amount of the supplement consumed and the high cost of the material. In this lot, the pigs seemed to have an especially keen appetite for forage, and all forage was consumed in this lot during first half of the feeding period. The low gain and high cost of gain in dry lot shows the necessity of forage for pork production.

A Jersey Cow With a Record

The Imported Jap 75265, a noted Jersey sire, now has five daughters which have completed official year's records of more than 800 pounds butterfat. Jap's Mertha Lass 329714 is his fifth daughter to pass that mark. The fame of Jap's Mertha Lass does not end with her production of 15,616 pounds milk and 803 pounds fat in one year. What is most remarkable is that although only six years old she has completed four consecutive year's records and has dropped five calves. Jap's Mertha Lass was first placed on test when two years and one month of age. Her records in the order in which they were made are:

Milk—Lbs.	Fat—Lbs.	Age Yrs.	Age Mos.
6,987.1	383.8	2	1
7,646.5	400.3	3	3
12,648.5	660.0	4	3
15,616.8	803.3	5	6

Jap's Mertha Lass still has a number of years in which to continue her production record, both in milk and in calves. Her last test was her first as a mature cow and still better records may be expected from her. She is owned by Meridale Farms, Meredith, N. Y. High production records are not only confined to the daughters of The Imported Jap. His granddaughters are making records that are equal to, and in some instances better than, their dams' records.

One of the most recent records made by a granddaughter of The Imported Jap is that made by Jap Sayda Flora 279211. In one year she produced 14,177 pounds milk and 708 pounds fat. This is her third official test.

Silage Reduced Steer Losses

Reports from steer feeders in western Ohio show that practically all beef producers have lost money on the past season's operations. In many cases fat steers have sold for the same price per pound as the thin steers that were put on feed in the fall. However, records kept by these feeders in co-operation with the county agents show that steers fed on rations which included silage were fed with less loss than those on dry feed, such as shock corn and liberal quantities of mixed hay. In most cases steers have been fed from 25 to 50 pounds of silage per day, depending upon the amount of grain which was fed in conjunction.

The State Department of Agriculture prosecuted 221 dealers in Pennsylvania in 1919 for the sale of adulterated or misbranded feeding stuffs, fertilizers, lime products and seeds.

Few dairy farms have sufficient silo capacity.

Dairying for Profit and Pleasure

W. F. KENNEDY

As far as I am concerned dairying for pleasure means dairying for profit, for without profit there is no pleasure, and the greater the profit the greater the pleasure.

Our start in the dairy line began by necessity. We found our farm which we had purchased in a low state of fertility and felt the great need of feeding all our crops upon the farm as far as possible, planning to increase its yielding power. The cows with which we began were little better than scrubs and the profit received from them was small indeed. We read a great deal and soon began planning for better days. We studied the feeding problem and balanced rations, then our profits showed improvement. We began weighing the milk and using the Babcock tester, and our records showed that we were poor judges as to picking our best cows. This record was a great help in feeding, for then we knew the best producers and could feed accordingly.

As our profits still increased, we wanted better cows, having sold our poor producers. It was almost an impossibility to purchase them at any reasonable price, so we decided to raise them instead. We purchased a pure bred Jersey bull calf, and wishing some day to own a pure bred herd we also bought a heifer calf and later another. We still kept our records for butter production and disposed of the lowest producers. When we bought our next bull calf we were careful to get one from a dam with a good butter test and whose ancestors had good records for butter production. Blood will tell, and nowhere greater than in the head of the herd. Buy the best sire you can afford and you cannot afford a poor one.

With increased production came an increase in profits and still more pleasure. We have found that pure bred animals as a rule pay much better than others. But in making the dairy pay the man comes first. He should love his work and know it also. Many cows are condemned as poor producers when perhaps the cause is with their feeders. Let us strive for better care and feeding, see that our cows have a warm, well-lighted stable, are kept clean, fed, watered and milked regularly. Ice-cold water is poor material and should not be given. Select the breed that suits you best and grow pure breds.

If producing cream or butter, don't fail to use the cream separator with its many advantages. Study your market and produce high-grade dairy products. Above all, don't fail to keep a record of your cows and know what you are doing. *Ohio.*

Summer Comforts for Live Stock

CLIFTON E. MOWRER

When hot weather arrives a large number of things can be done to aid the comfort of all kinds of live stock. First, let us take the horse: Upon arriving at the barn after a hard day's work with a team, one should always wash the horse's shoulders. This keeps away germs which might later cause a very serious infection. It also adds comfort to the animals. If time can be found to curry them in the evening, they will rest easier. Then, too, we can turn them in the meadow or even in a closed yard where they can roam about at their own leisure.

On the other hand, cattle should be relieved as often as possible of the little pest called the "fly." Spraying early in the morning and in the evening will help wonderfully. Some prepared mixture should be used that has been successful in the past. While in the pasture they should have plenty of pure wholesome water and shade. Then again cattle should not be handled rough, especially in warm weather. It is a poor policy to send a half trained dog after them. A dog like this is little, if any, better than our city cousin, who always brings the cows home on a run. Great care should be taken not to excite a cow at any time. It will cause the milk supply to be reduced and flesh to be taken from the animals back. During long hot summer nights they are more comfortable in the pasture than in a hot sultry barn. The above things, along with a proud owner, good manager, sanitary barn and wholesome food, go to make the dairies of tomorrow.

Hogs and sheep should be supplied with plenty of cool shady places. The pen for the former must be roomy as well as clean. One often thinks of this animal as being very unclean. That is, they live and thrive on things disregarded by others of a higher type. But we must remember that they too are animals of dumb class and the better they are treated the better the results. Concrete wallows should not be forgotten. Comfort is given to them by the latest equipped pens. We may apply nearly the same things to sheep as cows, but we must not forget that sheep are timid and dogs must be kept away. *Pennsylvania.*

National Dairy Union Secretary

Announcement has been made by N. P. Hull, President of the National Dairy Union, of the appointment of A. M. Loomis, of Washington, D. C., as secretary of this organization, to succeed W. T. Creasy, of Catawissa, Pa., deceased. Mr. Creasy had served the dairy interests of the United States faithfully and effectively for the past six years, and his death is a matter of sorrow and regret. His long experience as Master of the Pennsylvania State Grange, and as a member of the Pennsylvania State Legislature, made his services for the dairy interests of unusual value.

Mr. Loomis at present is secretary and assistant to T. C. Atkeson, Washington Representative of the National Grange, and will carry on the work of the Dairy Union in connection with the Washington office of the National Grange. For two years before joining the Grange's Washington office, Mr. Loomis was at Albany, N. Y., as assistant secretary of the New York State Food Commission, and prior to that he was agricultural editor of the Jamestown Journal at Jamestown, N. Y. His previous experience also includes several year's work as secretary of the Southwestern New York Holstein Breeders' Association, and five years as secretary of the Chautauqua County (N. Y.) Farm Bureau. The secretary's office, where he can be found at all times, is at 303 Seventh street (Seventh and Pennsylvania avenue), Washington, D. C. Members of the N. D. U. who may be in Washington should by all means call on the new secretary, and all correspondence with him should be sent to that address.

Trucking Baltimore's Milk Supply

Two co-operative truck lines conducted by farmers' associations are carrying 1800 gallons of milk into Baltimore daily, and that city would lose 75 per cent. of this supply if the farmers were compelled to go back to former transportation methods, according to a bulletin recently issued by a large ship-by-truck bureau at Akron, Ohio.

"Allowing two quarts of milk a day for the average family," the bulletin says, "the combined quantity of milk brought into the city in a year by these trucks would supply 3600 families during that period. If 75 per cent. of the dairymen were to quit business—and they say they would if the trucks were not operating—the milk coming into the city would be reduced by 1350 gallons, or, putting it in terms of families, 2700 families would be compelled to look to other sources for their milk supply."

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Sunny SIopes

(Continued from page 190)

took chairs, and Prince waited. Connie racked her brain. Five minutes ago there had been ten thousand things she yearned to know about this strange existence. Now, unfairly, she could not think of one. It seemed to her she knew all there was to know about them. They looked into each other's eyes, men and women, as men and women do in Chicago. They touched hands, and the blood quickened, the old Chicago style. They talked plain English, they liked pretty clothes, they worshipped good horses, they lived on the boundless plains. What on earth was there to ask? Quite suddenly, Connie understood them perfectly.

But Prince realized that he was not making good. His one claim to admission in her presence was his ability to tell her what she wanted to know. He had got to tell her things,—but what things? My stars, what did she want to know? How old he was, where he was born, if he was married,—oh, by George, she didn't think he was married, did she?

"I am not married," he said abruptly. David looked around at him in surprise, and Carol's eyes opened widely. But Connie, with what must have been literary intuition, understood. She nodded at him and smiled as she asked, "Have you always lived out here?"

"No." He straightened his shoulders and drew a deep breath. Here was a starter, it would be his own fault if he could not keep talking the rest of the night. "No, I came from Columbus when I was eighteen. Came for my health." He squared his shoulders again, and laughed a big deep laugh which made Connie marvel that there should be such big deep laughs in the world.

"My father was a doctor. He sent me out, and I got a job punching time in the mines at Cripple Creek. I met some stock men, and one of them offered me a job, and I came out and got in with them. Then I got hold of a bit of land and began gathering up stock for myself. I stayed with the Sparker outfit six years, and then my father died. I took the money and got my start, and—why, that is all." He stopped in astonishment. He had been sure his story would last several hours. He had begun at the very start, his illness at eighteen, and here he was right up to the present, and—he rubbed his knee despairingly. There must be something else. There had to be something else. What under the sun had he been doing all these fourteen years in the ranges?

"Don't you ever wish to go back?" Connie prompted kindly.

"Back to Columbus? I went twice to see my father. He had a private sanatorium. My booming voice gave his nervous patients prostrations, and father thought my clothes were not sanitary because they could not be sterilized. Are you going to stay here for good?"

It was very risky to ask, he knew, but he had to find out.

"I am visiting my sister in Denver. We just came here for the Frontier Days," said Connie primly.

"There is another Frontier Week at Sterling," he said eagerly. "A fine one, better than this. It isn't far over there. You would get more material at Sterling, I think. Can't you go on up?"

"I have been away from Chicago four weeks now," said Connie. "In exactly two weeks I must be at my desk again."

"Chicago is not a healthy town," he said, in a voice that would have done credit to his father, the medical man. "Very unhealthy. It is not literary either. Out west is the place for literature. All the great writers come west. Western stories are the big sellers. There's Ralph Connor, and Rex Beach, and Jack London and—and—"

"But I am not a great writer," Connie interrupted modestly. "I am just a common little filler-in in the ranks of a publishing house. I'm only a beginner."

"That is because you stick to Chicago," he said eloquently. "You come out here, out in the open, where things are wide and free, and you can see a thousand miles at one stretch. You come out here, and you'll be as great as any of 'em,—greater!"

The loud clamor of the dinner bell interrupted his impassioned outburst and he relapsed into stricken silence.

"Well, we must go to dinner before the supply runs out," said David, rising slowly. "Come along, Julia. We are glad to have met you, Mr. Ingram." He held out his thin, blue-veined hand. "We'll see you again."

Prince looked hopelessly at Connie's back, for her face was already turned toward the dining-room. How cold and infinitely distant that tall, straight, tailored back appeared.

"Ask him to eat with us," Connie hissed, out of one corner of her lip, in David's direction.

David hesitated, looking at her doubtfully. Connie nudged him with emphasis.

Well, what could David do? He might wash his hands of the whole irregular business, and he did. Connie was a writer, she must have material, but in his opinion Connie was too young to be literary. She should have been older, or uglier, or married. Literature is not safe for the young and charming. Connie nudged him again. Plainly if he did not do as she said, she was going to do it herself.

David turned to the brown-faced, sad-eyed son of the mountain ranges, and said:

"Come along and have dinner with us, won't you?"

Carol pursed up her lips warningly, but Prince Ingram, in his eagerness, nearly picked David up bodily in his hurry to get the little party settled before some one spoiled it all.

He wanted to handle Connie's chair for her, he knew just how it was done. But suppose he pushed her clear under the table, or jerked it entirely from under her, or did something worse than either? A girl like Connie ought to have those things done for her. Well, he would let it go this time. So he looked after Julia, and settled her so comfortably, and was so assiduously attentive to her that he quite won her heart, and before the meal was over she said he might come and live with them and be her grandpa, if he wanted.

"Grandpa," he said facetiously. "Do I look as old as that? Can't I be something better than a grandpa?"

"Well, only one papa's the style," said Julia doubtfully. "And you are too big to be a baby, and—"

"Can't I be your uncle?" Then, glancing at Connie with a sudden realization of the only possible way the uncle-ship could be accomplished, he blushed.

"Yes, an uncle is better," said Connie imperturbably. "You must remember, Julia dear, that men are very, very sensitive about their ages, and you must always give them credit for youth."

"I see," said Julia. And Prince wondered how old Connie thought he was, his hair was a little thin, not from age—always had been that way—and he was as brown as a Zulu, but it was only sunburn. He'd figure out a way of letting her know he was only thirty-two before the evening was over.

"Are you going over to the street to-night?" he asked of David, but not caring half a cent what David did.

"I am afraid I can't. I am not very good on my feet any more. I am sorry, the girls would enjoy it."

"Carol and I might go alone," suggested Connie bravely. "Every one does out here. We wouldn't mind it."

"I will not go to a street carnival and leave David," protested Carol.

"It would be rather interesting." Connie looked tentatively from the window.

Prince swallowed in anguish. She ought to go, he told them; she really needs to go. The evenings are so much fuller of literary material than daytimes. And the dancing—

"I do not dance," said Connie. "My father is a minister."

"You do not dance! Why, that's funny. I don't either. That is, not exactly,— Oh, once in a while just to fill in." Then the latter part of her remark reached his inner consciousness. "A minister. By George!"

"My husband is one, too," said Carol.

Prince looked helplessly about him. Then he said faintly, "I—I am not. But my father wanted me to be a preacher. He sent me to Princeton, and I stuck it out nearly ten weeks. That is why they call me Prince, short for Princeton. I am the only real college man on the range, they say."

"The street fair must be interesting," Connie went back to the main idea.

"Yes indeed, the crowds, the sideshows—I mean the exhibits, and the lotteries, and—I am sure you never saw so much literary material crowded into two blocks in your life."

"Oh, well, I don't mind. Maybe some other night we can go." Connie was sweetly resigned.

"I should be very glad,—if you don't mind,—I haven't anything else to do,—and I can take good care of you."

"Oh, that is just lovely. And maybe you will give me some more stories. Isn't that fine, David? It is so kind of you, Mr. Ingram. I am sure I shall find lots of material."

David kicked Carol warningly beneath the table. "You must go too, Carol. You have never seen such a thing, and it will do you good. I am not the selfish brute you try to make me. You girls go along with Mr. Ingram and I will put Julia to bed and wait for you on the porch."

Well, of course, Mrs. Duke was very nice, and anyhow it was better to take them both than lose them both, and that preacher had a very set face in spite of his pallor. So Prince recovered his equanimity and devoted himself to enjoying the tumultuous evening on the street. He bought candy and canes and pennants until the girls sternly refused to carry another bit of rubbish. He bought David a crimson and gold silk handkerchief, and an Indian bracelet for Julia, and took the girls to ride on the merry-go-round, and was beside himself with joy.

Suppose his friends of the range did draw back as he passed, and gaze after him in awe and envy. Suppose the more reckless ones did snicker like fools, nudging each other, lifting their hats with exaggerated courtesy,—he should worry. He had lived on the range for fourteen years and had never had such a chance before. Now he had it, he would hang on to it if it cost him every sheep he had on the mountains. Wasn't Connie the smartest girl you ever saw, always saying funny, bright things, and—the way she stepped along like a goddess, and the way she smiled! Prince Ingram had forgotten that girls grew like that.

They returned to the hotel early and found David waiting on the porch as he had promised. He was plainly tired, and Carol said he must go to bed at once. They all rose and walked to the door, and then, very surprisingly, Connie thought she would like to sit a while on the quiet porch, from which every other one had gone to the carnival, and collect her thoughts. Carol frowned, and David smiled, but what could they do? They had said they were tired and now must go to bed perforce. Prince looked after her, and looked at the door that had closed behind David and Carol, and rubbed his fingers thoughtfully under his collar,—and followed Connie back to the porch.

"Will it bother you if I sit here a while? I won't talk if you want to think."

"It won't bother me a bit," she assured him warmly. "It is nice of you to keep me company. And I would rather talk than think."

So he put her chair at the proper angle where the street lamp revealed her clear white features, and he sat as close beside her as he dared. She did not know it, but his elbow was really on the arm of her chair instead of his own. He almost held his breath for fear a slight move would betray him. Wasn't she a wonderful girl? She turned sidewise in the chair, her head resting against the high back, and smiled at him.

"Now talk," she said. "Let us get acquainted. See if you can make me love the mountain ranges better than Chicago."

He told her of the clean sweep of the wind around his little cottage among the pines on the side of the mountain, of the wild animals that sometimes prowled his way, of the shouting of the boys on the range in the dark night, the swaying of distant lanterns, the tinckle of sheep bells. He told her of his father, of the things that he himself had once planned to be and do. He told her of his friends: of Lily, his pal, so-called because he used a safety razor every morning of his life; of Whisker, the finest dog in Colorado; of Ruby, the ruddy brown horse that would follow him miles through the mountains and always find the master at the end of the trail. And he told her it was a lonely life. And it was. Prince Ingram had lived here fourteen years, with no more consciousness of being alone than the eagle perched solitary on the mountain crags, but quite suddenly he discovered that it was lonely, and somehow the discovery took the wonder from the free glad life, and made him long for the city's bright lights, where there were others,—not just cowboys, but regular men and women.

"Yes," assented Connie rather abruptly, "I suppose it would be nice to be in a crowd of women, laughing and dancing and singing. I suppose you do miss it."

"That was not what I meant," said Prince slowly. "I don't care for a crowd of them. Not many. One is enough." He was appalled at his own audacity, and despised himself for his cowardice, for why didn't he look this white fine girl of the city in the eyes and say:

"Yes, one,—and you are it."

(To be continued)

To Get Rid of Poison Ivy

The most simple method of eradicating poison ivy or poison sumac is to grub it out, experience on many farms has shown. In doing this, care should be taken to cover the hands and to prevent infection from the clothing. Gloves and clothing should be removed carefully and thoroughly cleansed. All exposed surfaces of the body should be washed with plenty of soap and water and then thoroughly rinsed.

Repeated mowing or cultivation is effective. The use of kerosene is recommended by the Cornell foresters where injury to other plants or trees is not to be feared. It may be applied with a sprinkler or spraying pump, and in many cases one application is sufficient. Arsenate of soda has been used very successfully and without injury to the trees to kill poison ivy on trees not less than from 6 to 10 inches in diameter. This is also effective for ivy on walls, buildings, and fences.

Circular 102 from the Ohio experiment station states that common salt, iron sulphate, and calcium chloride may be used in the eradication of poison ivy.

This should be applied as a spray in June and again late in July or in August. In case of common salt, a solution of about three pounds to a gallon of water is used.

Dean R L Watts
Penna State College

The Practical Farmer

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Corn Shows and Corn Crops

By W. F. MASSEY

THERE are fads in breeding plants and animals. Years ago the Jersey breeders insisted upon a solid color, black tongue and black switch. The advent of the great cow, Coomassie, put an end to this sort of nonsense, and while Jersey cows still run to solid colors mainly, a particolored animal is not discarded. And now the Holstein breeders turn down a cow with a black leg, though I cannot see why a cow with black hair on her legs cannot make as much and as good milk as one with white hair. Fads that have nothing to do with the object for which an animal or a plant is grown had as well be discarded.

Years ago a great deal of interest was awakened in corn improvement and corn shows were held all over the country. These shows had a great deal of value in stirring up farmers to the improvement of the crop. But the score card for the judging of the exhibits was an arbitrary one, making certain points essential in grain and ear. Shape of ear must approach to the cylindrical. The tips and butts must be complete and rounded with grain and the shape and packing must be of a certain form. The score card aimed at the production of handsome ears, just as the Jersey breeders aimed at solid color. The color had nothing essential to do with getting the most milk and butter from the cow and the shape of the ear of corn did not mean that the corn ears which came nearest to the requirements of the score card would by reason of the grade make more corn per acre than other ears which failed to get a prize by reason of greater variation from the score card. It was simply making the particular shape of ear the object of corn breeding, when the real object should be to increase the productive capacity of the corn plant.

The primary error was in assuming that the ear is an individual, and the breeding was for pretty ears. The fact is that an ear of corn is a great multitude of individuals. The true individual is the grain, for in the cloud of pollen blowing over a field, every grain on the cob may have had a different male parent, and may hence have inherited different tendencies. Selecting ears and planting a row to each ear was to show the character of the ear.

The row from one ear was found more productive than the others, and it was assumed that the whole ear had that character, which by no means followed. But at the shows the ear shape still prevailed and prevails now. On a long table are ranged the ten ears from each contestant. The judge with his score card goes over each exhibit and finally finds the one nearest to the score card, and gives it the blue ribbon. He does not know what the yield per acre of the corn from which these ears came was. All he has found is that one man has selected ears which come nearer to the score card requirements than another. He could not possibly advise a farmer that the first prize ears when used for seed would make as much or more corn than the ears he passed by without a note. In fact it has time and again been shown that ears that did not come anywhere near the score card demands made far more corn per acre than the pretty prize ears.

Not THIS ——— *but THIS!* *"What we have got to do is to take the corn PLANT as the essential individual breed"*

I have shown that the cylindrical ears with tips well covered with corn will become less and less productive if continually selected to these points, for the ears tend to grow shorter every season. A good ear filled with well-shaped individual grains, with a snout at the tip, shows a tendency to grow longer rather than shorter. But the score card would down that ear, especially if it tapered from the butt to tip. And yet, just such ears have made more corn an acre than the score card ears.

What we have got to do is to take the corn plant as the essential individual breed to a good type of plant, neither too short nor too tall. In the South the natural tendency of corn is to grow taller than in the North, later in maturing and in fertile soil to carry the ears up almost out of reach and with a short top above the ear. We need a type of corn plant that will carry its ears in convenient distance from the ground, but with shorter joints and as many leaves as the tall plants. Then we need to breed to greater product per plant.

The ears of the Southern Prolific varieties of corn would never be noticed by the judge at a corn show, but these prolific varieties have made more corn on an acre than the big one-eared type has ever made. And yet there are men now in our experiment stations who insist that a corn with one big ear on a stalk will make more corn than a corn that makes two or more smaller ears.

Mr. Batts, of North Carolina, made 256½ bushels of corn on an acre with a selection from Cocke's Prolific, a corn long ago bred in Virginia. No one-eared type ever made such a crop; and that it was fairly made was well attested to by a committee of the State Board of Agriculture. Of course, these southern-bred prolific varieties are too late for the northern growers to mature them well. But it is possible that a twin-eared corn of a well naturalized northern type can be produced when growers and breeders aim at corn bushels in breeding rather than corn ears. The editor of *Wallace's Farmer*, in Iowa, proposed a test between a lot of the ugliest nubbins I ever saw pictured and the first prize ears of last fall. Whether it is being carried out I am not informed. But those nubbins will show up better than the score card people imagine, for the western farmers have discovered that the score card ears have not done what was claimed for them. We need real corn shows, not corn ear shows, but shows of corn showing the whole plant and its ear or ears, and a certificate of the yield of shelled corn made by the field from which the plants came. This will teach something. The shows now teach nothing but that one man selected better score card ears than another man.

Plant a plot for seed from the best acclimated seed to your climate. When the tassels appear and before any pollen is ripe, go through the plot and remove the tassel from every plant that does not come somewhere near a typical plant for your section, so that the pollen will be made by the better class of plants. At maturity select ears from plants that bear two or more ears, and use for planting another seed patch and the remainder to plant the crop. Keep up this selection and you will succeed.

Stop breeding for a fad and breed for bushels of corn per acre.

The Grip that Pulls Men Through

EDGAR L. VINCENT

LAST night, just as mother and I were creeping into bed, the door bell rang. Hustling into our clothes we hurried downstairs to open the door to a young farmer man who is very dear to us. He was then on his way to take the night train for New York to attend a meeting of dairymen, called to consider the price for milk that should be fixed for the coming months. He wanted to talk the situation over before he went, so ventured to call us out of bed at that late hour.

This young farmer man knows just all there is to the present day strenuous situation. He is at this very moment up against all the trying things that farmers have to deal with in this year of failing supply of help, high cost of feed, lack of fertilizer and all the rest. He has been working to the very limit of his strength, and sometimes wondering how long he could keep it up. But the thing which pleased me and set my heart to singing a new song was what he said just as he was starting out into the night.

"I am not going to give it up! I believe we will come out all right yet. We are doing our best and I don't believe we will fail!"

Well, mother went back to bed to say a little bit of a prayer by way of thanksgiving that there are farmer folks whose grit is still good and whose faith is in the right place. That is the power that pulls men through. And right now is the time to prove it.

I think we all understand that the world is passing through what many believe to be the most trying time men ever saw. This is no time to think or to speak of the causes for this dilemma. Most men have their theory about that, and so, too, have we all our solution of the vexed problem. Men are drifting away to the cities to work for higher wages than the farmer can pay. The prices we get for farm produce is not high enough to enable us to carry on our work as we would like to carry it on. We are cramped for ready money to do as we would by our boys and girls. We have watched the white hairs coming into the heads of our wives, and our hearts have been touched to the quick by the thought that we have been helpless to prevent it. Many of us have seen the savings of past years go drop by drop to meet bills our earnings of the present were not sufficient to pay... It is a hard, tough, uphill job we have on hand.

But think of the things we have to make us glad! In all God's great heaven there is nowhere a cloud so black and so thick that on the other side the sun is not shining with noonday splendor. The inventive genius of the past few years seems to have been just fitting us for the crisis of today. How many fine farm implements we have been able to command in the past decade! In every line this is true. Tractors, riding plows and harrows, threshers, mowers, tedders, hay loaders, milking machines, water systems, cream separators, washing machines —everything to make labor easier. Men have been slipping away from us, but our hands are strengthened by the machinery which in great part takes their place. Automobiles, gasoline engines and other forms of motor power have lately come to the front almost miraculously, as if it had been foreseen that we were soon to be shorthanded and would need other help than that of man.

And all the while through these trying days we have had bumper crops. It seems that the Power which watches over and guides the affairs of men has kept watch and ward over us and taken joy in seconding the efforts of you and me by making this old earth of ours bring forth as it never did before. We can almost catch the sound of a Voice speaking to us and saying, "Because the need of humanity is so great, and because you are so willing and happy in doing your best to meet the need, I will put My great hand under your arm and together we will feed the world and make it blessed!"

And can we not all see that now, today and every day, men are drawing closer and closer together in their good will and their determination to stand by one another? Farmers of thousands of neighborhoods are coming to each others' support in a brave and brotherly way.

"I have thought it all out," a young farmer said to his neighbor in speaking of the conditions prevailing with him. "I am doing all I can myself. I may have to fix up the milking machine and use it until fall, and then I may have to sell some of my cows; but I shall go through all right."

"You won't sell a one of them!" So the neighbor spoke up as quick as a flash. "We'll stand by you and see you through."

And this spirit of helpfulness and co-operation is working wonders and cheering the hearts of those who might otherwise be discouraged and inclined to lie down in the furrow.

A strawberry patch is a regular little gold mine this year—and this is the month we cash in on it

Just here a word as to farmers putting heart into one another. Let's not complain quite so much, but let us do our level best to see the bright side and to work for it with all our might. It is just as easy to say the kindly, cheery, uplifting word as if is to talk about the hard things we have to bear, and it helps a lot more. There is something queer about these old hearts of ours. Touch us just right and our souls wither and well nigh die. Do a kindly deed or speak an inspiring word and the heart responds with a quick, 'I'll never give up beaten! I'll fight this battle through to the end! And I know we will win." It is so much more worth while just now to keep a brave heart, to say good, helpful things and to put them into our letters when we write to other folks, than it is to be gloomy and down in the mouth. And when enough of us talk that way and work each for the good of our fellows unselfishly, this cloud of doubt and fear and anxiety will lift and we shall see clear through to daylight. Come on! Let's begin now! If we have been living the life that wins, let's put ourselves into it a bit more wholeheartedly, knowing that so we shall bring a blessing upon ourselves and make the world better.

How and Why I Can

Mrs. JESSIE H. KEITH

EVERYWHERE, in the section of Virginia in which I live, one can notice that less land is in cultivation than usual this year; which means, of course, that grain will be higher than ever next winter and breadstuffs on the increase. In the trade magazines one reads that less corn and tomatoes, etc., are being planted for the canning factories, and that canned goods will have to be higher. We can all join "overall clubs" or resolve to wear our old clothes, and thus bring down the high cost of living in that respect, but the inner man cannot so easily be subdued. We must eat, whatever the cost, and it has seemed to me that the country woman has a real opportunity this coming summer, not only to fill her own pantry shelves with canned fruits and vegetables, but to make some extra money for herself from the sale of the surplus jars she is able to put up. She ought to find a ready sale for them, as many people are not only willing, but eager, to buy the pure, unadulterated food product of the country housewife.

When I started out, five years ago, to put up for sale home-canned fruits and vegetables, I had very little practical experience, and much to learn on this subject. The authorities to which I returned again and again, and from which I received the greatest assistance, were the excellent government bulletins for the canning, drying and preserving of fruits and vegetables, sent out by our Agricultural Department in Washington. In addition to these I read carefully the few old cook books in my possession, went as often and wherever I could to hear the county demonstrator and discussed with my friends and neighbors their various recipes and experiences. These, combined with plenty of hard work and a determination not to be discouraged by a few failures, with the invariable policy never to sell anything that was not the best I could do, have been the secrets of such success as I have had; secrets which are within the reach of even the most isolated country woman.

My own experience has been that any woman who follows the directions of her government bulletins carefully, and with the ordinary equipment contained in any farm kitchen, can put up delicious and beautiful jars of the following vegetables and fruits: Garden and pole beans should be broken before putting in the jar for ordinary use, but the young garden beans, if gathered when not over two inches long, will make the most delicious and tender beans for vegetable salad. Tomatoes are one of the most satisfactory of all vegetables to put up and can be used in so many different ways. To put up whole, to be sliced and used for salad, they should be peeled carefully and the core taken out without breaking the seed-pod, and cooked in the jar. Young, tender beets can be canned with great success in the farm kitchen, and okra, that best flavorer of soups, combined with tomatoes, is not only easily kept, but adds variety to the winter menu. While I have never been able to can sweet corn successfully in a hot-water canner or in a boiler on the kitchen stove, a soup mixture of tomatoes, green or lima beans, sweet corn, carrots, okra and a few sliced onions, seasoned with salt and pepper, and cooked for two hours in an open kettle before being put boiling hot into sterilized hot jars, will keep most successfully. A splendid recipe for putting up sweet corn, that every country woman should know, that you will not find in the government bulletins, but that I know from

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JUNE 15, 1920

IF, when this meets your eye, you have not already done so, won't you please look across to the opposite page and read our friend Mr. Vincent's article, "The Grip That Pulls Men Through"? I am impressed with it as a very timely article and I believe it's worth reading several times and thinking over very carefully.

We have been hearing a lot lately about the poor outlook for farming this season. The papers are full of it, our mails reek with it, and our conversation is dyed blue by it. We hear with sorrow of farmers who won't sow because they don't know how they are going to reap, and there are many tales of deserted farms. Yes, as Mr. Vincent says, the world is passing through trying times—perhaps the most trying men have ever seen—and we farmers are in it, too, taking our share of the world's testing days; but—

In what man's lifetime *hasn't* the world passed through what it's people have believed to be its most trying times? And yet it has always come through, hasn't it? And, why? Well, *not* because men "quit"—not because they didn't sow when they couldn't see how they were going to reap (though there have always been such men). And not even because wise men planned and figured out a way to overcome the world's troubles. It is because God, who wisely plans all things, has watched over His world, has seen the men and women who have bravely and cheerfully faced all difficulties and has brought them "to a happy issue out of all their afflictions."

And is the situation today more discouraging than it has ever been before? No—because *He is faithful!* He has never turned His back on His world, and He never will. *But*—He has on individuals. Do you remember how He said to King Saul, through the lips of Samuel: "Thou has rejected the word of Jehovah, and Jehovah hast rejected thee." (I Samuel 15:26)? Now here's something serious—far more serious than the shortage of farm labor or the high cost of living: Are you and I rejecting the word of Him who said, "Take, therefore, no thought for the morrow," and through his servant Paul bid us "In nothing be anxious," when we fail of our faith in Him and become despondent over the present situation? And are we therefore in danger of being rejected by Him?

That would be the only *real* calamity, wouldn't it?

EDWARD T. WALKER.

A Chance to Learn by Seeing

PENNSYLVANIA, New York and New Jersey hold their annual Farmers' Field Demonstration meetings this month. The dates are, Pennsylvania "Farmers' Week" at State College June 22-24; New York, "Farmers Field Days" at Ithaca (Cornell University) June 30, July 1 and 2; New Jersey, "Annual Summer Field Meeting" at New Brunswick (College Farm) June 16-19.

The summer meeting at Pennsylvania State College last June was held in response to a practically unanimous request at the previous winter meeting, and the experiment, if experiment it may be called, was so wonderfully successful that its establishment as an annual fixture seems certain. The exercises this year will deal largely with the various experiments made by the College, which include nearly all departments of farm work.

Groups will be formed at stated times in the field, the orchard, or the barn, the experiment briefly explained, the group conducted over the various stages and the results or lessons pointed out.

The New York State event is the first of its kind held by the college at Ithaca, but it does not require much of a phophet to predict its success and its yearly continuance.

These summer meetings with their excursion element and recreational features, coming in the lull between seed time and the heavy work of harvest, will likely appeal to larger numbers of persons as time goes on than attend the more purely "instructional" gatherings in the winter. Certainly the opportunities of learning by seeing—which is the best way to learn anything—are greater in the summer when the crop, the tree, or the plant disease can be seen and studied face to face in the field, than in the lecture room from pictures and description. Comfortable accommodations may be more easily secured—particularly in a college town—in the summer. The fact that there is a fine chance for a little much needed relaxation, is no small inducement.

This Also Will Pass

THERE is no denying the fact that the present scarcity of labor is one of the most serious difficulties the farmers in this country have ever had to face. Indeed it is hard to overestimate its gravity, and its possible far-reaching results not only to the farmer himself but to our whole country. Having admitted this, however, and looking the situation squarely in the face, there is no cause for despair nor is there reason to believe it will not be solved and righted—even if it does not right itself before long, as it undoubtedly will. The very fact that such a train of calamities must follow a prolonged shortage of the labor necessary for tilling the ground is in itself a guarantee against its continuance.

We are very apt to forget that the things which are happening now were not produced by natural causes, but are all a part of the terrible world upheaval we have been going through. The troubled waters can not became calm again as soon as the storm ceases. The armistice ended the fighting and we are now going through the "rolly" troubled period which follows. The current which has taken and still is taking labor from the farms will just as surely bring it back when the waters settle again.

In the meantime the farmer who sticks to the job and keeps pegging along the best he can is going to come out way ahead in the long run. Perhaps for the time being he can make a little more money at something else. How long is he sure that this something is going to last, and when it stops, what then? Perhaps this year he cannot get the help to raise as much as he would like to, or as much as last year. He can be pretty sure, however, that he is going to get good prices for what he does raise. And in the meantime he is sure of a good, comfortable home living for himself and his family amid normal surroundings.

The boys, women, and men beyond the usual working age, seen in the fields, shows how strenuously most farmers are trying to do the job.

Evidence is at hand that the gravity of the problem is being felt generally and that every possible effort is being made to solve it. One such move has been made by Governor Smith, of New York, who has called in that State a conference for devising ways and means of meeting the farm labor shortage. He is perfectly right in calling upon the representatives of the various organizations to come forward as a "patriotic duty." A public meeting was recently held in Philadelphia under the auspices of the Agricultural Committee of the Chamber of Commerce for the same purpose. Addresses were made by Pennsylvania Secretary of Agriculture Rasmussen and others. The Department of Labor and Industry of Pennsylvania has issued a bulletin announcing that in each district office of the State Bureau of Employment one day a week is to be set aside as Farm Labor Day for the purpose of bringing farmers into contact with any farm laborers whom they can discover.

While little in the way of tangible results has been accomplished as yet, these straws show the direction of the wind, and if their influence is felt through harvest time much will have been done.

The "S. O. S." on Timber

WITH soft wood lumber at $80 to $85 per thousand feet in our Eastern States, hard wood lumbers so scarce as to make the situation critical for many American industries, and print paper advancing in price beyond all precedent because of the shortage of wood pulp, is it to be wondered at that the government is sending out an S. O. S. on forestry?

But the danger sign should have been put out long ago and heeded, not only in the care of the large wooded tracts so rapidly disappearing from our entire country, but by every farmer throughout the land in practical forestry in a small way on his own farm. Not only are the majority of our farmers today recklessly wasteful in their treatment of their rapidly vanishing wood lots, but few are doing any planting by way of replacement.

We will feel the pinch of timber-poverty before the trees planted this season come to maturity, but if planting isn't taken up systematically without further delay we will ultimately come to a lumber famine that will seriously check our national prosperity.

It is to be expected that the present agitation will cause Congress to act in enlarging the area of the national forests on a broad scale and enabling the Federal Forest Service to co-operate with the states in stopping the destructive forest fires and growing timber on state and private lands. So far good —but what are we eastern farmers individually going to do about it?

We've been told a hundred times that growing timber increases the moisture retaining qualities of our soil and decreases erosion of our land; now here's another incentive for us to undertake a little home forestry. Three-fifths of the original timber of the United States is gone; we are using timber today four times as fast as we are growing it; nearly two-thirds of the timber left is west of the Great Plains where its availability to the average user is greatly lessened. Don't these facts, vouched for by the Federal Forest Service, make it plain that forestry on our eastern farms, even on a very small scale, is going to be very profitable—first, in increasing the value of the farm during growth, and secondly by yielding a revenue at maturity?

On a very large proportion of our farms there are already sadly depleted wood lots that are begging for reinforcement by new plantings, or untillable spots that should be planted with varieties in demand for lumber and best suited to the locality. Why not take this matter up seriously right now as a part of our farming? Write to the Forest Service at Washington, tell your story and ask for advice. The least we can do is to be careful in the handling of the timber, big or little, we already have and plant (or transplant) a few trees each year.

Farmers who show interest in their boys' junior projects have little trouble keeping them on the farm.

Vegetable Diseases—How to Meet and Combat Them

So many misfortunes can befall vegetables before they reach maturity that one often wonders why we have as great success as we do with the home garden. Diseases make almost as many ravages as insects, and although this is not a problem which affects the home gardener as directly as the truck grower or commercial gardener, it is well if anyone who wants to grow vegetables successfully bears in mind a few points on the control of disease so that he will not be entirely at sea if his cabbage starts to wilt or his beans to look sick. The following suggestions are made by the New Jersey State College of Agriculture:

Damping off is the most common cognomen for a fungous disease which attacks plants pretty generally. The fungous organisms attack the seedlings at the surface of the soil causing them to wilt, fall and die. Strangely enough it is plants growing on rich soil which are affected. This is due to the fact that the organisms which cause the rot live on manure and decaying vegetable matter of all kinds. Here are a few precautions to prevent this disease which attacks almost every common vegetable:

Remove and destroy the diseased plants and the soil in which they are grown.

Ventilate carefully (in the cold frames).

Avoid excess of water.

Sterilize the soil (by means of steam or formaldehyde).

The application of hot sand to the area affected, or watering it with weak Bordeaux mixture, will often kill the disease organisms, but care must be taken with the latter that the plants are not killed.

If the lower leaves of your lettuce look as if they had been scalded with hot water, drooping and falling to the ground, the plant is probably infected with lettuce drop or rot. As it moves rapidly not only to the rest of the infected plant, but also to other plants in the bed, it should be checked at once. Pull and burn or bury the plants as soon as the disease is detected. If you are growing lettuce on a large scale and are afraid of future trouble in this direction, practice crop rotation and sterilize your soil. Celery, cucumber, radish and other plants are also subject to this disease.

Anthracnose is the polite name for a very common fruit rot which is liable to attack many vegetables and causes quite serious losses. Peppers are subject to it. It is most severe on sunburnt fruits. Spraying with Bordeaux mixture is the most satisfactory means of controlling it.

This Year's Potato Planting

Reductions of 5 per cent. in the acreage planted to potatoes last year are indicated for this season in reports recently received by the Bureau of Crop Estimates, United States Department of Agriculture. The reports came through the field agents of the bureau who on May 1st inquired of growers in important producing states concerning their intended plantings. High prices for potato seed and the farm labor shortage are the principal reasons given for the reduction. The reports show that for the states covered the potato acreage will be 95 per cent. as large as last year.

New York reports the intention to plant 97 per cent. of last year's acreage, Michigan 90, Wisconsin 95, Minnesota 89, Colorado 94, Idaho 95, and California 110. Aroostook County, Maine, which produces 60 per cent. of the potato crop of New England, intended to plant as much or more, but deep snows, strikes, and embargoes have delayed receipt of fertilizer, and plantings will depend upon the amount received in time.

Simple Spray Destroys Currant Worm Pest

Do worms destroy your currant and gooseberry crops? The pests may be controlled by the application of an arsenical spray, according to the department of entomology at the Ohio Experiment Station.

The spray is applied when the largest currants and gooseberries are about the size of half-grown peas. It consists of Bordeaux mixture, to which has been added three pounds of arsenate of lead paste or one and a half pounds of the powder to 50 gallons of the solution.

The arsenate of lead is applied to destroy the currant worms; the Bordeaux spray prevents the development of leaf spot and mildew on the foliage of the currants and gooseberries.

The Yellows Disease of Cabbage

A most destructive disease of the cabbage is the one known as "yellows." The only way of avoiding losses where this disease has become established is to grow varieties of strains which are not subject to attack. Plant pathologists of the Wisconsin Experiment Station have developed strains of several varieties which are quite resistant to the disease. One of these, the Wisconsin Hollander (Danish Ball Head type), a hard winter variety, suitable for storage and shipping, has been in commercial use for several years, and has maintained its resistance to yellows wherever tried. Resistant strains of All Seasons, which is a favorite with Ohio growers, and of the Brunswick have also been perfected. It is expected that sufficient seed will be produced by this fall so that these strains may be offered to the public.

Diseased plants have a sickly yellowish green color. The yellowing is often more pronounced on one side of the plant, resulting in a twisting and curling of the plant and leaves. The latter, beginning with the lower ones, are dropped prematurely, leaving the plant at the end of the season, if it survives, with a long, bare stem and perhaps a small, worthless head. Diseased plants may be killed, however, within a few weeks after being transplanted.

This and other diseases of the cabbage, together with control measures, are fully discussed in Farmers' Bulletin 925, which may be obtained free from the United States Department of Agriculture, Washington, D. C.

If you are cutting wood to sell in the village, give generous measure in lengths. City folks dislike a short cord of wood as much as a farmer hates an 1800-pound ton of coal.

Late Planted Potatoes Produce Good Seed

That farmers and gardeners should consider the growing of late potatoes is pointed out by J. B. Keil, garden assistant at the Ohio Eperiment Station.

Late-planted potatoes set tubers in September or October and generally get more rainfall than early potatoes, which set their crop in August. Hence, late-planted potatoes frequently yield the best.

Seed of good vitality more often is secured from potatoes maturing late in the season.

The last week in June is regarded as a favorite date for late planting, and the seed for this planting is generally sun-sprouted.

This is done by taking the potatoes from the cellar, removing the long sprouts and then allowing the tubers to be exposed to the light until planting time on a barn floor, corncrib, or any place where they can be spread out to light.

Under this treatment only small green sprouts develop, and the potatoes grow very rapidly after planting.

Apple Rust and the Red Cedar

Wherever apples are grown in districts where red cedar is abundant there is usually more or less apple rust, which appears either on the leaves or fruit as orange-colored pustules. In favorable years this rust may be so prevalent on apple foliage that it causes the leaves to fall early, thus materially reducing the size of the crop. Pennsylvania apple orchards each year suffer quite extensively from rust and in 1919 individual orchards were examined by the Bureau of Plant Industry, Pennsylvania Department of Agriculture, where the estimated loss from this cause ran as high as six or seven hundred dollars.

The apple rust fungus alternates in its life between the apple and the red cedar, living on the apple in summer and wintering over on the red cedar in the purple-brown galls popularly known as "cedar apples." In spring spores from these galls pass in the wind to nearby apple trees, and there start the summer stage again on the leaves and fruit.

On account of the immense number of these spores, and the ease with which they infect the apple, spraying the apple leaves has given but very poor results in the control of the rust, and it is recognized in all states where rust occurs that the only satisfactory method of dealing with it is to get rid of the red cedars for a considerable distance around an orchard. Since this procedure involves the property of other individuals, whatever destruction is necessary must be carried out under state authority. Under the Horticultural Inspection Act (Act of Assembly 236, approved June 29, 1917) the Pennsylvania Department of Agriculture has power to take measures for the control of this and other similar plant disease. The act states that if any premises are found to be infested with dangerous insects or plant diseases the owner may be required to remove the plants within ten days, and upon failure of the owner to carry out such instructions the Department may then proceed to destroy the plants, all costs of removal to be chargeable against the owner and to be collected as taxes.

Did you ever think how little it costs to operate a tile drain after it is installed? It works for you day and night while the ground is wet.

Pennsylvania has 1556 townships, varying from five in Cameron to fifty-seven in Chester.

80 Glasses From One Package

A package of Hires Household Extract—25c at your grocer's, a yeast cake and some sugar. These will make 40 pints or 80 glasses of the best rootbeer you ever tasted. And it's so easy to make.

The actual juices of roots, barks, herbs, berries—and pure cane sugar make Hires Household Extract pure and healthful.

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Contains no Paris Green or Arsenic

A safe insecticide for your plants and vegetables. Write for booklets, etc.

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VEGETABLE PLANTS We grow leading varieties. Cabbage, price per 100, 30c., per 500, 90c., per 1000, $1.50. Lots of 5000 or more $1.25 per 1000. **Cauliflower.** Per 100, 65c., per 500, $2.50, per 1000, $4.00. **Tomato.** Per 100, 40c. per 500, $1.00, per 1000, $1.75; lots of 5000 or more, $1.50. *Send for prepaid parcel post prices on all kinds of plants* C. E. Field, Sewell, N. J.

Factory Closing Out Stock Header Forks, Hay Forks, Manure Forks, Bundle Forks. Your selection $9.00 per dozen. Rush your order. Free literature showing pictures of forks, assorted shovels and spades. **Process Shovel & Fork Co., Salina, Kans.**

Tomato and Cabbage Plants by prepaid mail, Lord Baltimore and Bonnie Best tomato, Jersey and Charleston cabbage. 300, $1.00; 500, $1.75; 1000, $3.00. **COLEMAN PLANT CO., TIFTON, GA.**

IF YOU WANT to sell or exchange your property write me. JOHN J. BLACK, 118th Street, Chippewa Falls, Wis.

How and Why I Can

(Concluded from page 194)

personal experience to be fine, is as follows:

11 cups young, tender sweet corn cut from the cob, 1 cup of salt, 1 cup of sugar, 2½ cups of water. Cook until thoroughly done and put up boiling hot in sterilized jars. Be sure to soak this corn over night to get out the salty taste before using, or if you want to use any in a hurry, bring it to a boil on the stove with fresh water in a saucepan, and pour off that water as soon as it boils well, adding fresh water. If these directions are followed carefully, it will taste like fresh corn out of the garden.

The fruits that, in my opinion, are most successfully put up by the ordinary hot-water, cold-pack method advocated by the bulletins, are, first and foremost, peaches, canned with a little sugar and eaten as a dessert, their fresh flavor being most welcome to the winter palate. Cherries, blackberries, gooseberries, plums and rhubarb are easily put up and keep most successfully. With the present scarcity and high cost of sugar, one encouraging fact about these fruits is that they may be just as safely put up without any sugar and can be sweetened as they are opened and used, for the pies and puddings that are so appreciated by both country and city dwellers during the winter months.

I find that summer apples can be canned easily, either as apple sauce or with the skin left on, cut into eighths and put up in water only. These are excellent for breakfast, fried in a little bacon fat with a teaspoonful of sugar sprinkled over.

In the beginning, or for the first year I was in business, I used only the old-fashioned Mason jar with the screw top, or glass top with wire clamp. As a consequence I had many disheartening failures due to defective rubbers or tops, or to rubbers that did not seem to be able to stand the long periods of cooking necessary to can beans, soup mixture, etc., by the hot-water method, or the higher degree of heat in a steam canner. Just about that time, or a little before, a jar was put on the market with a patented top, which could be bought in small quantities and the tops put on by a little hand sealer that was inexpensive and easy to operate. I was, I believe, the first woman to use these jars in a small way, although now they are within the reach of any and everyone, being for sale at hardware and department stores. I have never used any other kind since then, and have now almost no loss from spoilage. Also I feel sure that the attractive appearance of the vegetables and fruit in these clear glass jars with with their neat lacquered tops has helped me very greatly to dispose of them. A jar that will not leak or wear out around the top is always the cheapest to use, no matter what the cost—although these jars are just about the same price as the old-fashioned ones.

If the housewife intends to invest in a canner, I should strongly recommend buying a small steam one. They are not very expensive and will pay for themselves many times over in the labor and time saved, and if, in addition, she will use these up-to-date jars with the new patent tops, she can then with safety add to her canning list such vegetables as peas, spinach, squash, lima beans, green corn, soup stock and chicken. These methods and equipment are great time and labor savers over the old hot-water, Mason jar way. When canning chicken I always put the wings, backs and necks in a jar to themselves as a basis for soup, while the more favored portions can be served fricasseed, browned in the frying or roasting pan, or sliced cold as it comes from the jar. For several years I have put up my surplus broilers and old hens in the fall, a practice which saves feed during the winter and is the greatest convenience. Nothing could be easier than to go to one's pantry on a cold winter day and to get, among other things, a quart jar of tender chicken and a pint of young green peas ready for the day's dinner simply for the trouble of heating them.

A country woman can be very independent of the mounting prices at the grocer's when her larder is stocked with these home-grown foods, and she can add many a penny to her own store by the sale of all the jars she can spare. My own pantry shelves are filled each year with all the above, and a tin can from the grocer's is a rarity at our house, while thousands of jars of these country products leave our kitchen each year to be consumed by town and city dwellers. *Virginia.*

Soy Beans for Soil Improvement

Soy beans can be satisfactorily raised without inoculating the seed, but no nitrogen-fixing nodules are produced on the roots unless (1) the seed is inoculated, (2) inoculated beans have been previously grown on the land, or (3) soil on which soy beans have been grown is applied to the new field. A circular containing detailed information concerning the inoculation of soy beans as well as their general culture has just been issued by the Ohio Agricultural College Extension Service, Columbus, Ohio, and may be had without cost on request.

Millet Produces Hay

Millet is a valuable crop to grow for hay where other spring crops have failed, according to the Ohio Experiment Station.

Millet has yielded as high as 4½ tons of hay per acre in tests at the Ohio Station. The German millet may be planted in June; it does best in warm weather.

Hungarian millet has yielded satisfactorily and this variety is adapted to culture on thinner ground than is German millet.

Millet may be broadcasted and cultivated in with a harrow or drilled in with a grain drill. Three or four pecks of Hungarian or German millet will seed an acre.

When used at the Ohio Experiment Station in connection with acid phosphate as a fertilizer the gain for lime on the corn crop alone has been 5½ bushels per acre. Two tons of ground limestone applied to the acre brought this result.

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More wear, more comfort, more all around satisfaction come to you from Blue Buckle OverAlls and Coats *because we put more care and more quality into them!*

Blue Buckles really fit you! They're comfort-cut with generous oversize that reduces wear at strain points.

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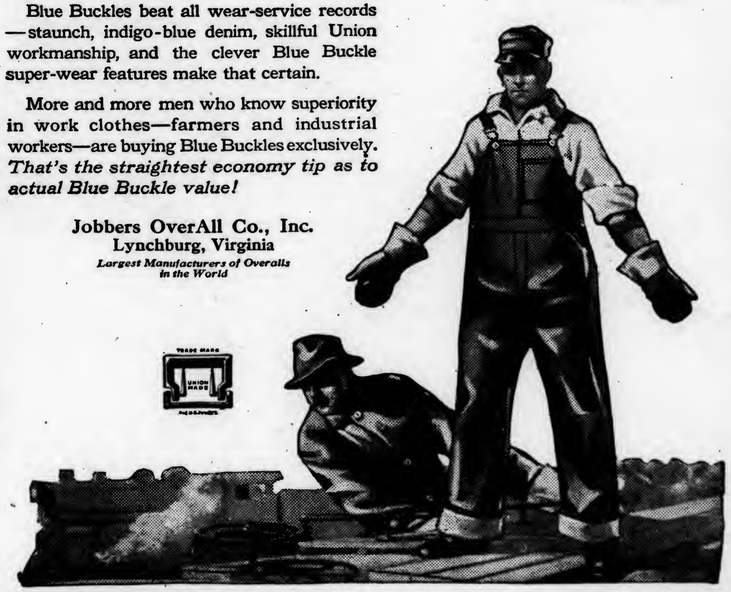

A Dollar for a Woman's Idea

How do you make home "homey"? How do you make your family and yourself more comfortable and life on the farm more attractive?

These are questions that thousands of other farm women are asking you who are making a *success* of the farm home, and The Practical Farmer wants to be the medium for carrying your answer. To do this we propose to make our August 1st issue a sort of "Home Makers' Number."

You've *discovered* things, Mrs. and Miss Farmer, about home making, that some of your sisters on the farm know nothing about. Maybe it's about heating or lighting your home—or about a desirable water supply system. Maybe it's about floor coverings, or conveniences in home-made (or easily obtainable) furniture or fixtures for the kitchen or other part of the house. Maybe it's about paint or shrubbery or flowers, or something else to beautify the exterior of the home. Or perhaps it's some special kink in clothing to make the children more comfortable, or a trick in cooking to gladden the "tummies" of the household. Or perhaps—well, you know—there are a thousand things that help to make home "homier" and life more livable; we want to know about any of these and you pick out the one—or ones—you can best tell about.

Just write us a letter about it in your own words; we won't limit you on length, but suggest that you make your letter as long as is necessary to tell your story fully—but no longer; that is, don't *waste* words. Each letter should treat of a simple phase of the general topic of home making; if you have several things you'd like to tell about, write a separate letter concerning each.

We will pay $1.00 for each of these letters we publish in the Home-Makers' Number. We would like to publish about 25 of them—but perhaps we will use more, or possibly fewer, depending on their length and acceptability. Contributors are *not* limited to one prize—we will pay a dollar for each letter published without regard to who writes it or how many others we have accepted from the same writer. How many prizes will *you* win?

All letters should reach us by July 15th to have consideration. But don't wait until the last moment; if you have an idea *now* jot it down and send it along; if others occur to you later send them then. But "do it now" is a good motto to go by in this, as in many other things!

Getting More from Dressed Poultry

WESLEY RAY.

The farmer or poultryman who has the business ability to establish a select trade for dressed poultry is reasonably sure of success, and he will be well paid for the extra trouble and pains which are involved in selling direct to the consumer. To most farmers this catering to a select trade is an obstacle sufficient to hinder them from making the attempt and too often they put their fowls on the general market along with the good and indifferent, receiving most any old price. For those who are rightly situated and of the needed mental makeup, nearly every community offers opportunity to greatly increase poultry profits by selling dressed poultry direct to those who are willing to pay for quality. We have had a great deal of experience along this line. We sell dressed poultry the year round and can never catch up with our orders. Since the cold storage fowl has become so plentiful, we find plenty of customers who are ready to pay fancy prices for birds which they know are fresh-killed.

We put our poultry through a fattening process, consisting of 60 per cent. corn meal, 30 per cent. middlings and 10 per cent. beef scraps. We feed this twice a day—as much as the fowls can clean up—then they have all the vegetables they can eat. When the birds are nice and fat they are slaughtered and dry picked, drawn and placed in a refrigerator which is built for just this business in our wagon. We keep this wagon looking "spick and span" by a new coat of paint now and then and by scrubbing with good soap and water. The birds are placed in attractive shapes and altogether they look tempting, indeed!

We get, on an average, 8 cents per pound more, which of course pays us well for this extra work. We market our eggs in the same way. We guarantee every egg to be strictly fresh and we live up to this guarantee, not by making good the bad ones, as one of our neighbor farmers offered to do, but by seeing that nothing but strictly fresh ones went in. We once sold on the general market and those were the days that balanced our poultry ledger on the wrong side. We just kept poulty then, I suppose, looking back over our experience now, for the artistic effect that they had. Now, we raise the very best for a market that took time and energy to build up and the ledger balances on the right side. In other words, raising poultry one time was a loss, now it is the best and surest paying proposition on the farm.

West Virginia.

Storage Battery Troubles

"Loss of capacity" in storage batteries usually comes from clogging of the pores of the plates with sulphate, which is not visible to the eye because the surface of the plates is maintained in proper condition, but the interior portions of the plates have not been thoroughly reduced. This condition can be remedied, according to Professor Foltz, of the Colorado Agricultural College, by prolonged overcharge at a low current rate—at about one-eighth of the normal eight-hour rate.

"Loss of active material" will reduce the capacity of a battery. There is always a little shedding of the active materials of the plates, and this may be considered as normal, but when the shedding becomes excessive it indicates that the batteries are being discharged too much. The remedy is to maintain a higher degree of charge in the battery.

Horses have advanced very materially in price during the last three months.

HAMPTON METAL
Hampton Metal is the only material that has no come back.
Fire-proof as steel—but rust-resisting and corrosion resisting. And "needs no paint." No steel sheathing or galvanized iron made, can stand the tests given Hampton Metal. As roofing, siding or sheathing, it has no equal.
HAMPTON SHEATHING STYLES:
Clap-board, Plain Brick Siding, Rock-face Stone, Rock-face Brick, Three-inch Beaded, Corrugated 1¼ in. and 2½ in.
HAMPTON ROOFING STYLES:
Pressed Standing Seam, Rolled Cap Roofing, 2 V. Crimp, 3 V. Crimp, Corrugated 1¼ in. and 2½ in. Nails and lead washers furnished. Delivery prepaid to nearest R. R. Station. Guaranteed as represented or money back. Shipments made twenty-four hours after receipt of order.
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90 BREEDS Poultry, eggs, baby chicks, pigeons, dogs, parrots, ferrets, Belgian Hares, bargain list free; 60-page book 20 cents. Bergey's Poultry Farm, Telford, Pa.

Fine Poultry. Turkeys, Geese, Ducks, Guineas, Bantams, Pigeons, Hares, Calves, Dogs, Stock. Eggs low. Catalog. Pioneer Farm, Telford, Pa.

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One million feet purchased from government
Our enormous purchase means rock bottom prices for you if you act quickly. Just the thing for making chicken coops, hen houses, stalls, rooms, partitions, Only $38 per 1000 feet (Regularly $55.)
4 ply board in panels 4 x 8 feet—and every panel backed by our $10,000 guarantee of money-back-if-not-satisfied.
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Reds, Rocks, Leghorns, Minorcas and Broilers at rock bottom prices by Parcel Post, Prepaid, and safe delivery guaranteed. Our eleventh year. Catalogue Free.
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Hummer's Famous Chicks Are large, strong and healthy. Bar. Rock, per 100, $18.00; R. I. Reds, per 100, $19.50; S. C. Brown Leghorns, per 100, $17.00; S. C. White Leghorns, per 100, $17.00; S. C. M. Anconas, per 100, $31.00; each week delivery. Live arrival, Prepaid. E. R. HUMMER & CO., Frenchtown, N. J.

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Wyandottes, Rocks, Reds, Leghorns Pekin, Rouen and Indian Runner Ducklings
Aldham Poultry Farm, R. 3 C, Phoenixville, Pa.

FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Anconas, Orpingtons, Langshans, Brahmas, Leghorns, Andalusias, turkeys, ducks, geese, guineas. Prices low. Ralph H. Raby, Loudonville, O.

Vigorous Baby Chicks White Wyandottes, Barred Rocks, R. I. Reds and broilers; $16 per 100 up. Circular free. J. W. CONNORS, Palermo, New Jersey.

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are helping their husbands to prosper—are glad they encouraged them to go where they could make a home of their own—save paying rent and reduce cost of living—where they could reach prosperity and independence by buying on easy terms.
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—land similar to that which through many years has yielded from 20 to 45 bushels of wheat to the acre. Hundreds of farmers in Western Canada have raised crops in a single season worth more than the whole cost of their land. With such crops come prosperity, independence, good homes, and all the comforts and conveniences which make for happy living.
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For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan, and Alberta, reduced railway rates, etc., write Department of Immigration, Ottawa, Can., or
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Making a Good Corn Crop

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1295, JULY 15.—It is none too early to plan for selling the year's crops. Have you found wagon or stock scales to be an advantage? Do you sell with neighbors or make the best bargain you can by yourself? Do you have difficulty getting cars to ship hay, etc.? What advantage has a motor truck been to you?

TOPIC NO. 1296, AUG. 1.—What has the tractor done in your locality this year? The labor shortage has brought the tractor into prominence. Many farmers have bought but some haven't who might use a tractor to advantage. These want facts and figures from real experience. Tell us about your (or your neighbor's) savings from (or troubles with) a tractor in actual service *in all seasons.*

C. C. C., Virginia.—Of all the things essential to a good growth of corn I find nothing equal to good cultivation and plenty of it. Good cultivation cannot be had with inferior implements. Quick and thorough work is frequently essential in the growing crop of corn, particularly during a wet season, else the corn is frequently under-cultivated. In addition to our one-row, two-horse cultivators, which we use for general cultivating purposes, we also have three 5-shovel adjustable one-horse cultivators. During a wet season when we are sometimes prevented from entering fields for a period of two weeks or more by excessive rainfall, we put these little cultivators to work, enabling us to cover quite a lot of ground very satisfactorily in short order. We have no set rule for the number of times our corn shall be cultivated; we find it should be governed to a great measure by the season. Of course we cultivate more during a dry season than a wet one, but never depend upon a wet season making us a corn crop without plenty of cultivation. We have but little dread for the dry season or drought, as we once had, for we have demonstrated to our entire satisfaction we can pretty well make the difference by frequent and thorough cultivation. Our corn crop varies but little between the two seasons, due to retaining our moisture by increased cultivation. We frequently cultivate our corn as many as seven times during a dry season, and usually from four to five times during a wet season. We are thinking less and less of deep cultivation at any period of the corn's growth. Experiments conducted on the home farm in deep and shallow cultivation have proven rather shallow cultivation ideal in our soil. During the last cultivation of our corn, particularly during a dry season, we merely scratch the surface soil sufficiently to prevent a crust from forming, smooth down the surface soil and get a dust mulch. While we exercise a great deal of care in selecting our seed corn, we have never found it necessary to raise a special patch. We select our seed ears from the growing stalks in the field, marking them as selected. I have not the least doubt but detasseling barren stalks of corn is a paying proposition, though it is a feature of corn growing we have neglected in the past.

G. S., Georgetown, Del.—Before corn is up we try to use either the weeder or spike-toothed drag once or more, and unless soil becomes hard or packed by rains, continue the former until it is five or six inches high; then with 3-inch cultivator teeth give one cultivation each way, deep and close to the hills; after this shallower and farther from hills to prevent weeds and preserve a dust mulch. At about the third cultivation we take the 14-toothed light spike cultivator, or else sweeps with the regular instrument, leaving a dust mulch. Roots soon fill all the spaces and to within two inches of the surface, and we aim not to injure these. When tasseling commences we "lay by" with cover crop, if possible. The usual method here is to "plow" deep and close every time, in alternate spaces, allowing the corn to "recover" from its root pruning, and in a few days treating omissions likewise. Our practice is not favorably received, yet "the oldest inhabitant" said: "That is the best crop that field ever grew." Seemingly cultivation did it.

Restricted to one style of cultivator, if acreage is large, a one or two-row riding machine is necessary, but for best work a five or seven-toothed, one-horse, with expanding and depth levers, with attachments (side hoes, sweeps and leveler) our experience shows is best. We believe the best way to breed corn is to detassel barren stalks, select seed from standing corn in separate seed plot; but time and lack of help have seemed to prevent our doing so. We save seed at husking.

S. C., New York.—After good seed, proper fertilization, and the preparation of a satisfactory seed-bed, cultivation probably offers the greatest opportunity for increased yields, observation of good corn producers indicates. Cultivation should start early. A spike-tooth harrow, or weeder, should be used soon after the corn is up. In some cases it is advisable to go over the crop twice the first ten days or two weeks with one of these implements.

Ordinary cultivation should begin when the corn is a few inches high. The chief benefit of corn cultivation results from the killing of weeds; the tendency has been to over-emphasize the value of cultivation in conserving a soil mulch.

The weeds should never be permitted to get much of a start. Just so long as weeds are controlled, without injuring the corn roots, the cultivation will prove efficient. For most soils, the shallower the cultivation the better it will prove.

Unless the ground is very weedy, three cultivations are usually sufficient. With present labor conditions, additional cultivation certainly should not be given unless necessitated by the persistent growth of weeds and grass.

A. J. L., Albion, W. Va.—Corn should have frequent and shallow cultivation from June 15 until it covers the ground. Weed robbers and grass should be kept out of the corn field if we expect to get the best results, and the surface should be kept from crusting.

I use a two-horse one-row riding cultivator for the corn until it is too high to use this; then I use a five-plow one-horse cultivator.

I do not raise a special patch for seed, nor do I go to the trouble of detasseling barren stalks. This may be some advantage to the specialist in seed growing, but I find that I do not have the time to follow all such fine theories. I notice, anyway, that if the soil is properly prepared and plenty of available plant food given, with good cultivation, there are very few barren stalks in the field. Too thick planting and neglect to properly cultivate are the causes of most of the barrenness. I select my seed from the field as I husk my corn.

A. R., Coatesville, Pa.—We will suppose that by this time the corn is growing nicely and has been well harrowed with a two-horse spike harrow while the plants are just appearing above ground, and also harrowed a few days later. That stirs the surface of the ground all around the plant and hinders the little weeds from starting. Then I take the two-horse cultivator (a standard make) and stir the ground as deeply as I can. After that time I stir the ground just as shallow as I can. One of the best implements for shallow cultivation after the two-horse cultivator has loosened the ground up, is just a Hallock weeder. I take off two teeth for each row and start where the two-row planter started, and then the weeder will not destroy the corn and I can stir the ground on 18 or 20 acres in one day. When the corn is too tall for the weeder, I take the two-horse cultivator and put on sweeps instead of the regular cultivator hoes and they cultivate shallow.

If you do not know the value and necessity of shallow and frequent cultivation, just go to your corn field and move the ground gently from around a corn plant and see for yourself how near the top of the ground the little rootlets are that nourish the plant; you should avoid tearing these off with the cultivator. Now please don't let this go idly by, but try shallow cultivation. I select my seed corn from the general crop by picking it out at husking time and am getting very good results, but of course the ear row method is very good, too.

J. U., LaFargeville, N. Y.—I have found that the best way to handle corn, in this section at least, where it is mostly grown for silage, is to get it in the ground as early as conditions, mostly the weather, will allow.

Then as soon as it begins to show through the ground, run over it with a weeder or a smoothing harrow set very light; this breaks up the crust and gives the corn a chance to grow and also kills any small weeds.

The best style of cultivator is that drawn by two horses and working both sides of the rows. Some have doubted if the ordinary farm hand would do good work with this style of cultivator, but I have found that he will do better work with it than with a one-horse cultivator. But even the best cultivation will leave a few weeds in the hills and it pays to go through the corn with a hoe and get these weeds out; by taking three or four rows across the field a man will learn if there are a few weeds left to make hoeing worth while.

When I lived in the southern part of this state we saved seed corn from the entire field, selecting all good ears; but here we raise a variety for the silo which does not mature and so must buy our seed.

The main thing in growing corn is frequent cultivation until the corn shades the ground. One reason for this is that it helps to keep the ground moist by preventing evaporation.

W. A. G., Vincennes, Ind.—This section of country has always been great for good corn crops, but only since scientific farming has been practiced has corn growing been boosted to the top notch in yield. The essentials for corn are simple but must be met. Good soil well prepared and fertilized, seed of high grade, planting reasonably early, and intense, clean cultivation from first to last, generally results in big yields of corn.

The two-horse riding cultivator is generally employed until the corn gets too large. Then the one-horse, five-hoed implement is run in a shallow way until the tassels begin to appear. The first cultivation is of good depth. Afterward shallow, but often, and no weeds or grass are allowed.

With high grade seed to begin with, I have found it good enough to select next year's seed early and directly from the best corn in a field. That holds up the grade well. With the seed we employ we try to have an even stand of three stalks to the hill, the corn being in check rows. We find drilling is too risky about being kept clean. We try to handle the entire corn crop the same as if it was garden truck. We learned success by the one and five-acre contests, and are succeeding finely.

Careless seed selection costs much in wasted time and profits lost.

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The Women's Exchange

This is the farm women's *own* department—for them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JULY 15.—Tell us about some nice cooling drinks for the hot days and nights. Shall we still serve hot coffee with each meal? If not what do you find makes a good substitute.

AUGUST 1.—Home makers' number. See announcement elsewhere in this paper of prizes for contributions.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

How to Have Summer Comfort

Mrs. H. H., LaGrangeville, N. Y.—Not being able to leave home in summer on account of farm work, chickens, canning, garden work and helping in haying, summer guests, etc. (no one wants to visit a farm home in winter), I decided to try a change in rooms, food, clothing, etc. This can be tried out in any farm home. First of all I "made believe" (just as children do) that I was to have a three-months vacation. I prepared an unused bed room (too cold in winter to use) just as I would like it were I a boarder. It had painted floor; I laid down two rag rugs, left only plain, simple furniture, a stand for magazines, writing material, a good lamp, a small collection of books, thus being prepared for cosy evenings and rainy afternoons. I had previously mended up all old clothing, especially hosiery, so did no mending while on vacation; had new for Sunday wear and as old things gave out put in my rag bag. I hung no clothing in my room, but had a large screen made out of an old-fashioned clothes horse and this was stood across the end of the hall near bed room door; behind this also were kept shoes, rubbers, umbrellas, etc. I wore simple, cool clothing, old lawn dresses—white ones too, a luxury on a farm—cut off cuffs to make sleeves short, shortened all skirts to avoid laundry work and really enjoyed this part wonderfully.

My method of washing helps out, too. I have a small zinc tub. When getting dinner there is plenty of hot water. I put in a good suds any soiled pieces, company tablecloths, napkins and shirtwaists; I let these soak while getting dinner and when doing dishes rub out, hang on the line, and presto, work and wash both are out of the way. Another day I wash out other extras this way, using the warm rinsing water to scrub off porches, etc.

By all means try the screened porch if possible; prepare vegetables here and iron—what is necessary, but use all bedding, under garments, towels, etc., without ironing. Let the family eat on this out-of-door porch—if company comes they will enjoy it, too. Have an old table and tack on white oilcloth firmly, eat on this in summer; it saves time, money and strength.

I also tried eating the evening meal on the lawn before having the porch screened in. Let the young people serve—the men will enjoy it, and read the evening papers. Anything that keeps all contented and happy should be tried. Children will enjoy this new arrangement, too, and will be more willing to help. Make the children partners in the house and outdoors.

Mrs. O. J., Rio, La.—During the hot months I banish every feather pillow, woolen cover and all heavy draperies to the attic. I use pine straw or Spanish moss pillows with linen or other cool wash material for covers. I like unbleached muslin for curtains; they launder well, look cool and last for years. They look neat with hemstitched ends or stenciled borders. Cheesecloth or surgeon's gauze is pretty, but not so durable as the muslin. We have a wide screened porch at the back of our house furnished with a small cook stove and a steam pressure canner. The latter is the greatest saver of time and labor in cooking I have ever tried. I can have baked beans in forty-five minutes, young, tender vegetables in from ten to twenty minutes. An old hen will cook to spring chicken tenderness in less than one hour. Oatmeal or rice is ready for breakfast by the time I get the table set. I put my dinner in pans or tin buckets, set in retort, start fire, set the steam gauge and go about my work until the time is up, with no fear of anything scorching or sticking.

Overhead is our sleeping porch. It is furnished with hammocks made from barrel staves. The staves from one barrel, and four 14-foot lengths of No. 12 wire will make one hammock. A very good hammock can be made by hemming the ends of a strip of rag carpet, slipping stout rods through the hems and swinging with cords attached to the ends of the rods.

Mrs. P. C. H., Cornplanter. Pa.—When the warm summer days get here I remove the two kitchen windows, also dining room, pantry and bed room out of kitchen, covering all window frames with fly netting. For the ones not protected by porches I have some home-made awnings that will keep out rain or sun. The separator goes to the back porch, also do all washing, churning and other work out there that is convenient. I use a three-burner oil stove for cooking and often only use the big stove for Monday washing. If I were to purchase a new oil stove I would buy one with four burners, for when a big dinner is to be served it takes considerable planning to keep it all hot. Before having the oil stove I had a home-made fireless cooker that would keep potatoes warm from noon until night, and I left the dishes until morning for washing. Use your porch or yard on the shady side, get out all you can, and let in all light and air you can.

Our Boy's Room

MRS. S. M. JACKSON

Our boy's room was ceiled with rough boards and the floor was old, and worn with much scrubbing. I stained the floor with a strong tea made of red oak bark and copperas. When dry it was given a coat of floor varnish around next the walls; the center was covered with a home-made rug. We covered the walls with light blue "plaster board." This is cheaper than paper and requires no canvas underneath. I whitewashed the inside of fireplace as soon as we quit having fires, made a box about six inches deep to fit inside and filled it with ferns from the woods, and Wandering Jew to trail over and cover the sides. I covered the hearth with a mossy rug. This is prettier than any screen and does not interfere with ventilation.

On the mantle is an eight-day clock and a pottery vase which answers as a holder for pens, pencils and ruler; over it a picture of "Native Birds at Home."

We purchased an old writing desk and book case from a second-hand dealer, cut off the fancy carvings and gave them two coats of Japan lacquer, for this room. We made a stand for the phonograph by standing a goods box on end, fitting shelves inside for records, and draping with cheese cloth to match the window curtains.

We made a wide, roomy closet in one corner, with plenty of nails for hanging clothes, large pockets inside the door for shoes, baseballs, mittens and strings for kites. A wide shelf accommodates fishing tackle, bats, arrow heads, old clock wheels, tools, boxes of nuts, melon seed, pine cones, and other trophies from the fields and woods which would otherwise litter the whole house. I believe, if parents would give boys more privileges, and do more to make home attractive for them there would be less trouble in keeping them away from places where boys should never go. That is my experience.

Homespun Yarn from Ithaca

The housewife may take a tip from the modern hotelkeeper and have some needles and thread in the guest chamber.

New iron and tinware, like shoes, need to be "broken in." Rubbing unsalted fat over the ware and baking in the fat does the trick.

Color, flavor and variety should not be lacking in the menu, neither should the color scheme and flavors clash. It's rather a shock to discover a pink jelly has a mint flavor.

Zinc table tops may be scoured with a paste made from kerosene and baking soda. It should be well rinsed with hot water after scouring.

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9638.—Girls' long-waisted dress. Cut in sizes 8, 10, 12 and 14 years. To obtain the much favored blouse effect, the waist is joined to a body lining.

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SUNNY SLOPES

By Ethel Hueston

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Author of Prudence of the Parsonage, etc.

CHAPTER XXI

ADVENTURING

If Connie truly was in pursuit of literary material, she was indefatigable in the quest. But sometimes Carol doubted if it was altogether literary material she was after. And David was very much concerned,—what would dignified Father Starr, District Superintendent, say to his youngest daughter, Connie the literary, Connie the proud, Connie the high, the fine, the perfect, delving so assiduously into the mysteries of range life as typified in big, brown, rugged Prince Ingram? To be sure, Prince had risen beyond the cowboy stage and was now a "stock man," a power on the ranges, a man of money, of influence. But David felt responsible.

Yet no one could be responsible for Connie. Father Starr himself could not. If she looked at one serenely and said, "I need to do this," the rankest foolishness assumed the proportions of dire necessity. So what could David, sick and weak, do in the face of the manifestly impossible?

Carol scolded her. And Connie laughed. David offered brotherly suggestions. And Connie laughed again. Julia said Prince was a darling big grandpa, and Connie kissed her.

The Frontier Days passed on to their uproarious conclusion. Connie saw everything, heard everything and took copious notes. She was going to start her book. She had made the acquaintance of some of the cowgirls, and she studied them with a passionate eagerness that English literature in the abstract had never aroused in her gentle breast.

Then she became argumentative. She contended that the beautiful lawn at the Bijou was productive of strength for David, rest for Carol, amusement for Julia, and literary material for her. Therefore, why not linger after the noisy crowd had gone,—just idling on the long porches, strolling under the great trees? And because Connie had a convincing way about her, it was unanimously agreed that the Bijou lawn could do everything she claimed for it, and by all means they ought to tarry a week.

It was all settled before David and Carol learned that Prince Ingram was tired of Frontier Days and had decided not to go on to Sterling, but thought he too should linger, gathering up something worth while in Fort Morgan. Carol looked at Connie reproachfully, but the little baby sister was as imperturbable as ever.

Prince himself was all right. Carol liked him. David liked him, too. And Julia was frankly enchanted with him and with his horse. But Connie and Prince,—that was the puzzle of it,—Connie, fine white, immaculate in manner, in person and in thought,—Prince, rugged and brown, born of the plains and the mountains. Carol knew of course that Prince could move into the city, buy a fine home, join good clubs, dress like common men and be thoroughly respectable. But in Carol he would always be a brown streak of perfect horsemanship. Whatever could that awful Connie be thinking of?

The days passed sweetly and restfully on the Bijou lawn, but one day, most unaccountably to Connie, Prince had an appointment with his business partner down at Brush. He would ride Ruby down and be back in time for dinner at night if it killed him. Connie was cross about that. She thought he should have asked her to drive him down in the car but since he did not she couldn't very well offer her services. What did he suppose she was hanging around that ugly little dead burg for? Take out the literary material, Fort Morgan had nothing for Connie. And since the literary material saw fit to absent itself, it was so many hours gone for nothing.

After he had gone, Connie decided to play a good trick on him. He would kill himself to get back to dinner with her, would he? Let him. He could eat it with David and Carol, and the little Julia he so adored. Connie would take a long drive in the car all by herself, and would not be home until bedtime. She would teach that refractory Material a lesson.

It was a bright cloudless day, the air cold and penetrating. Connie said it was just the day for her to collect her thought, and she could do it best of all in the car. So if they would excuse her,—and they did, of course. Just as she was getting into the car she said that if she had a very exceptionally nice time, she might not come back until after dinner. They were not to worry. She knew the car, she was sure of herself, she would come home when she got ready.

So off she went, taking a naughty satisfaction in the good trick she was playing on that poor boy killing himself to get back for dinner with her. An hour in the open banished her pettishness, and she drove rapidly along the narrow, twisting, unfamiliar road, finding a wild pleasure in her reckless speed. She loved this, she loved it, she loved it. She clapped on a little more gas to show how very dearly she did love it.

After a long time, she found herself far out in a long stretch of gray prairie where no houses broke the bare line of

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the plains for many miles. It had grown bitterly cold, too, and a sudden daub of gray splashed rapidly across the whole bright sky. Connie drew a rug about her and laughed at the wind that cut her face. It was glorious,—but—she glanced at the speedometer. She had come a long way. She would just run on to the next village and have some luncheon,—mercy, it was three o'clock. Well, as soon as she had something to eat, she would hurry home and perhaps if Prince showed himself properly penitent she would not go right straight to bed.

She pressed down on the accelerator and the car sped forward. Presently she looked around, sniffing the air suspiciously. The sky looked very threatening. She stopped the car and got out. The wind sweeping down from the mountains was a little too suggestive of snow flakes, and the broad stretch of the plains was brown, bare and forbidding. She was not hungry anyhow. She would go home without any luncheon. So she turned the car and started back.

Here and there at frequent intervals intersecting roads crossed the one she was following. She must keep to the main road, the heaviest track, she was sure of that. But sometimes it was hard to recognize the heaviest track. Once or twice, in the sudden darkening of the ground, she had to leap hurriedly out to examine the tracks closely. Even then she could not always tell surely.

Then came the snow, stinging bits of glass leaping gaily on the shoulders of the wind that bore them. Connie set her teeth hard. A little flurry that was all, she was in no danger, whoever heard of a snow-storm the first week in October?

But—ah, this was not the main track after all,—no, it was dwindling away. She must go back. The road was soft here, with deep treacherous ruts lying under the surface. She turned the car carefully, her eyes intent on the road before her, leaning over the wheel to watch. Yes, this was right,—she should have turned to the left. How stupid of her. Here was the track,—she must go faster, it was getting dark. But was this the track after all,—it seemed to be fading out as the other had done? She put on the gas and bumped heavily into a hidden rut. Quickly she threw the clutch into low, and—more gas— What was that? The wheel did not grip, the engine would not pull,—the matchless Harmer Six was helpless. Again and again Connie tried to extricate herself, but it was useless. She got out and took her bearings. It was early evening, but darkness was coming fast. The snow was drifting down from the mountains, and the roads were nearly obliterated.

Connie was stuck, Connie was lost, for once she was unequal to the emergency. In spite of her imperturbability, her serene confidence in herself, and in circumstances, and in the final triumph of everything she wanted and believed, Connie sat down on the step and cried, bitterly, passionately, like any other young woman lost in a snow-storm on the plains. It did her good, though it was far beneath her dignity. Presently she wiped her eyes.

She must turn on the lights, every one of them, so if any travelers happened to come her way the signal would summon them to her aid. Then she must get warm, one might freeze on a night like this. She put up the curtains on the car and wrapped herself as best she could in rugs and rain coats. Even then she doubted her ability to withstand the penetrating chill.

"Well," she said grimly, "if I freeze I am going to do it with a pleasant smile on my lips, so they will be sorry when they find me." Tears of sympathy for herself came into her eyes. She hoped Prince would be quite heart-broken, and serve him right, too. But it was terrible that poor dear Carol should have this added sorrow, after all her years of trial. And it was all Connie's own fault. Would women ever have sense enough to learn that men must think of business now and then, and that even the dearest women in the world are nuisances at times?

Well, anyhow, she was paying dearly for her folly, and perhaps other women could profit by it. And all that literary material wasted. "But it is a good thing I am not leaving eleven children motherless," she concluded philosophically.

If men must think of business, and they say they must, there are times when it is sheer necessity that drives and not at all desire. Prince Ingram hated Brush that day with a mortal hatred. Only two days more of Connie, and a few thousand silly sheep were taking him away. Well, he had paid five hundred dollars for Ruby and he would find out if she was worth it. He used his spurs so sharply that the high-spirited mare snorted angrily, and plunged away at her most furious pace. It was not an unpleasant ride. His time had been so fully occupied with the most wonderful girl, that he had not had one moment to think how really wonderful she was. This was his chance and he utilized it fully.

His business partner in Brush was shocked at Prince's lack of interest in a matter of ten thousand dollars. He wondered if perhaps King Devil had not bounced him up more than people realized. But Prince was pliant, far more so than usual, accepted his partner's suggestions without dissent, and grew really enthusiastic when he said finally:

"Well, I guess that is all."

Prince shook hands with him then, seeming almost on the point of kissing him, and Ruby was whirling down the road in a chariot of dust before the bewildered partner had time to explain that his wife was expecting Prince home with them for dinner.

Prince fell from the saddle in front of the Bijou and looked expectantly at the porch. He was sentimental enough to think it must be splendid to have a girl waiting on the porch when one got home from any place. Connie was not there. Well, it was a good thing, he was grimy with dust and perspiration, and Connie was so alarmingly clean. But Carol called him before he had time to escape.

"Is it going to storm?" she asked anxiously.

Prince wheeled toward her sharply. "Is Connie out in the car?"

"Yes," said Carol, starting off down the road in a vain hope of catching sight of the naughty little runaway in the gray car.

"When did she go?" he asked.

"About eleven. She wasn't coming home until after dinner."

"How far was she going?"

"A long way, she said. She went that direction," Carol pointed out to the right.

"Is it going to storm?" asked David, coming up.

"Yes, it is. But don't you worry, Mrs. Duke. I'll get her all right. If it turns bad, I will take her to some little village or farm-house where she can stay till morning. We'll be all right, and don't you worry."

There was something very assuring in the hearty voice, something consoling in his clear eyes and broad shoulders. Carol followed him out to his horse.

"Prince," she said, smiling up at him, "you *will* get her, won't you?"

"Of course I will. You aren't worrying, are you?"

"Not since you got home," said Carol. "I know you will get her. I like you, Prince."

"Do you?" He was boyishly pleased. "Does—does David?"

Carol laughed. "Yes, and so does Julia," she teased.

Prince laughed, too, shamefacedly, but he dared not ask, "Does Connie?"

He turned his horse quickly and paused to say, "You'd better get your husband inside. He will chill in spite of the rugs. It is winter, to-night. Good-by."

"He will get her," said Carol confidently, when she returned to David. "He is nice, don't you think so? Maybe he would be perfectly all right—in the city. Connie could straighten him out."

"Yes, brush off the dust, and give him an opera hat and a dinner coat and he would not be half bad."

"He is not half bad now, only—not exactly our kind."

"Women are funny," said David slowly. "I believe Connie likes his kind, just as he is, and would not have him changed for anything."

At first, Prince had no difficulty in following the wide roll of Connie's wheels, for no other cars had gone that way. But once or twice he had to drop from the saddle and examine the tracks closely to make sure of her. Then came the snow, and the tracks were blurred out. Prince was in despair.

"Three roads here," he thought rapidly. "If she took that one she will come to Marker's ranch, and be all right. If she took the middle road she will make Brenton. But this one, it winds and twists, and never gets any place."

So on the road to the left, that led to no place at all, Prince carefully guided his weary horse, already beginning to stumble. He sympathized with every aching step, yet he urged her gently to her best speed. Then she slipped, struggled to regain her footing, struck a treacherous bit of ice, and fell, Prince swinging nimbly from the saddle. Plainly she was unable to carry him farther, so he helped her to her feet and turned her loose, pushing on as fast as he could on foot.

Anxiously he peered into the gathering darkness, longing for the long flash of yellow light which meant Connie and the matchless Harmer.

Suddenly he stopped. From away over the hills to his right, mingling with the call of the coyotes, came the

(Continued on page 204)

Feeding German Coal and Steel Centers

Here's another letter from our genial friend—and yours—Mr. R. W. Balderston, of Chester Co., Penna., Secretary of the Interstate Milk Producers' Association, who is in Germany with an American commission that is helping feed German children. We are sure our readers are sharing our keen interest in Mr. Balderston's first-hand impressions of war-racked Europe as set forth in this series of letters, of which this is the eighth.—EDITOR.

I cannot write much about agriculture in the midst of one of the greatest industrial areas of the world. We travel in any direction for twenty-five miles without getting out into anything that looks like farming country.

The coal mines and steel mills make me think of Pennsylvania, but there are many ways in which I cannot imagine myself at home, either around Philadelphia, or near Pittsburgh, or yet up in Lehigh county.

The coal mined here is partly a kind of anthracite, but chiefly bituminous of a good grade. Mines are under all the cities and the big culm piles are a feature of every landscape. In the more sparsely settled sections between the cities there is a miners' settlement, or "colonie," around each mine head. Since one mine may employ 4,000 men, this makes a big town in itself. The demand for coal the last fifteen years has so developed the region that there is no part of this whole coal country that does not have a mine which is eating away at the supply of power and heat that has kept Germany's industries going on such large dimensions. There are 4,300,000 people in this district, all of whom are consumers and not producers of agricultural products. There is enough land scattered around for gardens, and every family is keen to have one. These gardens hold the summer vegetables for the family, but no potatoes to speak of, nor other things for winter use, because they are not large enough and the soil is not very promising. The care given to them would put to shame our war gardens at home—but I cannot say I approve of the way the women are compelled to work in these plots. With the present seven or eight-hour day the men have time to do all this themselves, but the habits of years are hard to break, and formerly the men made days that were doubtless much too long. The roadsides and railroad banks are grazed by milch goats and milch sheep, which are the only sure source of fresh milk for this whole region. All winter these animals must have led a rather precarious existence—living on potato parings and such other scraps as the housewife could collect for them. Consequently this spring they looked woefully thin when first they came out of the cellar or kitchen where they had spent the winter. The sheep did not show it so much until they had been sheared on May 1st. I have not found out what amount of milk these sheep give at a time, but the goats are of a well bred dairy type. I sometimes think they would average more per animal than the poor cows that I saw during the winter in Schleswig. They are better able to rough it and to live on unsuitable food.

But this region must import great quantities of food, and now this problem is difficult because the Germans cannot afford to buy in Holland because of the unfavorable exchange. We have, therefore, the unusual situation of quantities of the best human food—dairy products—going begging not a hundred miles away, which the Hollanders would gladly exchange for coal, and not enough milk in Essen for the children up to three years of age. The potatoes and the flour must come from east Germany, and it is only by the strictest rationing that these staples can be distributed so as to provide each family with some. The ration per person varies but will average 3 pounds of potatoes and 2 pounds of bread per week. Formerly the German people ate about 7 pounds of bread and all the potatoes they wanted. When you remember that these people get meat only one meal per week you realize what is the food situation in a region that is supposed to be furnishing coal for France and Germany at top speed. Do you wonder that politics is largely a question of food and clothes and a place to live and that it does not take much to start a large body of these people on a rampage?

Essen-Ruhr, May 6, 1920.

Pennsylvania had 52 acres of alfalfa in 1899, which produced 72 tons of hay; 4935 acres in 1909, with a yield of 9154 tons. The recent co-operative acreage survey shows an estimated area of 62,214 acres and production of 176,773 tons.

Increasing Manure's Value

In order to get the maximum fertilizing returns from a ton of manure, it should be reinforced, or its application supplemented with acid phosphate, rock phosphate, basic slag or bone meal, experience of good farmers has shown. For each ton of manure 40 pounds of acid phosphate or 80 pounds of rock phosphate should be used. A ton of manure thus treated will give fully twice the returns of a ton of untreated manure, authorities state. Where the manure is not reinforced, its application may be accompanied with 200 to 400 pounds of acid, bone meal or basic slag.

It is well to keep in mind, further, the fact that the maximum returns from a ton of manure are obtained from light applications. That is, it is better to make frequent light applications than occasional heavy dressings.

Six tons applied twice in the rotation should be possible on many dairy farms. Along with a ton of limestone and 800 to 1000 pounds of acid phosphate, rock phosphate, bone meal or basic slag, this gives a complete and efficient treatment, widely adapted to soils in this section.

Another important factor in getting the maximum return from manure is to keep it from exposure. To prevent this loss of plant food, the manure should be hauled as produced directly to the field and spread, or else stored in a covered manure shed and kept well tramped. It is known that manure loses about half its value when left exposed in the barn lot through a six months' period.

Shrubs Need Pruning

"Prune the spring flowering shrubs soon," says the floriculturist at the Ohio State University. "If one notices the spireas, golden bells, weigelias, lilacs and bush honeysuckles, one will see that the blooms have appeared upon the tips of the branches which were produced last year. Beneath these flowers there are strong growing shoots starting at the present time. Therefore, as soon as the shrubs finish blooming they should be pruned back to these vegetative shoots in order that the strength of the bushes may cause long shoots to bloom next spring. The error in pruning shrubs has been to prune before they bloom rather than after. Prune all shrubs after they bloom, thereby insuring good flowers for next year."

Pennsylvania's Accredited Herds

Pennsylvania has jumped into third place in the United States in the number of accredited herds of cattle. At a conference of field workers of the Bureau of Animal Industry, Pennsylvania Department of Agriculture, announcement was made that during the third week in April, Pennsylvania had outdistanced Maine and North Dakota in the number of cattle herds officially pronounced free of all traces of tuberculosis.

But two states, Minnesota and Virginia, in the order named, still lead Pennsylvania in the number of accredited herds and Dr. T. E. Munce, head of the Bureau of Animal Industry, declared that it would be only a short time until Pennsylvania stood at the head of the entire nation, in this respect. Had Pennsylvania been given credit for the work done before the accredited plan of the Federal government was adopted, this state would have led the country months ago.

With the tuberculosis situation among the cattle of the state in such excellent shape, the bureau is now turning its attention to abortion diseases. Abortion diseases cause an annual loss to farmers and stock growers in Pennsylvania of more than $1,000,000 and at the conference of field veterinarians held in Harrisburg, plans were formulated to vigorously combat this type of disease during the coming year.

Clean Infertile Eggs Never Spoil

A clean infertile egg will never rot, it will dry up if left in the sun long enough, but there will be no odor and no decaying. If eggs are to reach the consumer as a clean, wholesome food the rooster must be eliminated.

News from the Breed Associations

The forty-third annual meeting of the American Guernsey Cattle Club was held on May 12, 1920, in Chicago. The Secretary reported that 18.8 per cent. more Guernseys had been registered during the fiscal year 1919-20 than during the previous fiscal year. The transfers show a gain of 35.8 per cent. A total of 167,458 Guernseys, 63,779 of which were bulls, and 103,659 were cows, have been entered in the Herd Register. Seven hundred and eighty Guernseys were imported during the year, 664 from the Island of Guernsey, 82 from the Island of Alderney, and 15 from England.

On May 1, 1920, 473 breeders in 33 states had 2125 cows on official test, a gain of 74.2 per cent. over the corresponding date one year ago. The Advanced Register contains 9186 records that average 9042.91 pounds of milk and 452.57 pounds of butter fat. One hundred and twenty-one names have been added to the list of Advanced Register bulls during the year, bringing the total up to 1309. The membership list of the Club contains 931 names of active members. This is a gain during the year of 153 names. One hundred and sixty-seven new members were added and 14 were lost by death or resignation.

The Holstein-Friesian Association is offering special prizes amounting to $14,500 for the Holsteins at the fairs this year and have issued a 27-page bulletin telling just how this will be distributed. A copy may be obtained from the secretary at Brattleboro, Vermont.

The third combination sale of Guernseys, conducted under the auspices of the American Guernsey Cattle Club, was held at Maple Farm, Midlothian, Illinois, on May 13, 1920. One cow sold for $17,700, exceeding the previous record for Guernsey females by $5200. Sixty-three head brought $123,760, an average of $1964; ten bulls averaged $2330, 53 females brought an average of $1895. Fourteen head brought over $2000 each, and two bulls and nine cows brought over $3000 each.

The top price cow was W. W. Marsh's Imp. Prospect's Rose des Houards 89003, the wonderful cow with the unusual honor of being the National Dairy Show champion, and the champion of her class in butter fat production. She was purchased by F. J. Rueping, Fond du Lac, Wisconsin.

Homespun Yarn from Ithaca

The removal of tea, chocolate and cocoa stains has puzzled more than one housekeeper. Did you ever try soaking the stains in cold borax water?

The steak plank dented? Try placing a wet pad of several thicknesses of chees cloth or muslin on the dent and covering it with a hot iron. The steam sometimes will raise the wood fibers, much as it raises the pile of velvet.

The parchment papers which are wrapped around print butter one housekeeper finds just the thing for greasing cake tins.

A velvety lawn beautifies any home. E 7 is a bulletin on lawn making the state college at Ithaca, N. Y., will send you.

System in doing housework is just as important as good equipment; the housekeeper whose work "is never done" is usually the one who never stops to plan her work.

If you put down your eggs in a solution of twelve parts of water to one of waterglass you should have no trouble about the eggs keeping—always providing you have clean, fresh eggs to start with.

Don't despair over the one blemish on an otherwise neatly-papered wall. A little ingenuity will often devise a patch which cannot be detected. In the case of large figured papers this is especially easy.

A convenience which many kitchens lack is a roll of heavy brown absorbent paper placed on a roller. It will save many times the washing of the table top or molding board, and it is a real necessity for draining fried foods.

Making a family budget helps the family's finances little unless every effort is made to stick to the budget. Have you a bulletin on budget making which the New York college of agriculture at Ithaca will send you? It is H 124.

Monday loses most of its proverbial indigo hue when there's a washing machine ready to be lugged into the kitchen from the woodshed. And when the machine can be hooked up to the farm electric plant, there isn't any blue Monday!

Have you wondered why the substitution of cocoa for chocolate in your recipes has not always been successful? Perhaps you did not add the fat which is lacking in the cocoa. About one-half tablespoon of fat for each ounce, or one-quarter cup, of cocoa should usually be used.

The dooryard is part of the home and it should be kept looking beautiful no less than the inside of the home.

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REG. P. CHINAS, BERKSHIRES, C. WHITES, Large strains, all ages, mated not akin. Bred Sows, Service Boars, Lincoln Service Bucks, Grade Guernsey and Holstein Calves. Collies and Beagle Pups. *Send stamp for prices and Circulars.*
P. F. HAMILTON. Cochranville, Pa.

GUERNSEY BULLS from Accredited Herd and A. R. O. dams. Herd sires Brookmeads Taurus of Breidablik No. 67887 and Langwater Polly No. 52117. Have calves and yearlings. Will be priced low. BREIDABLIK FARM, L. H. LeBARON, Mgr., P. O. Box 950, Wilmington, Del.

A BEAUTIFUL, straight, solid light fawn Jersey Bull, 8 months old, rich in the great Noble of Oaklands blood. A bargain and a prize. W. F. McSPARRAN, Furnissville, Pa.

15 REGISTERED HOLSTEIN HEIFERS 2 and 3 years old, $150 each for the lot. Tuberculin tested. Harry W. Vail, New Milford, Orange Co., N. Y.

REGISTERED BERKSHIRES Weanling Pigs, Soon ready. Will be priced right. BREIDABLIK FARM, L. H. LeBARON, Mgr., P. O. Box 950, Wilmington, Del.

FOR SALE Registered boar pigs old enough for service, $40, sent on approval, also sows, immuned. HARRY W. VAIL, NEW MILFORD, ORANGE CO., N. Y.

BERKSHIRES Offer a few choice Reg. Pigs, also an excellent seventeen-month old Epochal Service Boar reasonable. Woodside Farms, Glen Rock, Pa.

ALL DAY DISPERSAL SALE
REG. GUERNSEY AND JERSEY CATTLE AND REG. BERKSHIRE HOGS, ETC.
For Mr. FELIX L. HANLON, AT GREENORE FARM
On Sumneytown Pike, Penllyn, Pa., on Phila. & Allentown Trolley, 2 Miles Ambler or Penllyn Station, P. & R. R., 20 Miles North from Phila.
SATURDAY, JUNE 26, 1920, at 9 A. M.

25 REG. GUERNSEY Cows and Heifers and 5 Bulls, including 10 head of imported cows. The herd includes daughters and granddaughters of Governor of the Chene, Polly's Pride, Golden Noble's Lad, May King's Laddie of Chilmark, Brilliant of the Gree 11, and other equally good Guernsey sires, and from dams of the best Guernsey lines. 3 cows on A. R. test.
5 REG. JERSEY Cows and Heifers, and 2 Bulls, inc. a grandson of Noble of Oaklands, and the cow Queen Hugo of Belle Farm, 390049, just finishing her R. of M. test with a fine record.
7 GRADE JERSEY cows and heifers.
All cattle tuberculin tested May 6 and 7, 1920, and free from contagious abortion.
50 REG. BERKSHIRE hogs, incl. Epochal's Herdmaster 262608, a son of Epochal; Majestic Leader 3d, 237061, son of Grand Leader 2d and grandson of Superbus. 6 young boars sired by above. Also, Opportunity 237705, and approx. 40 head of best quality bred sows and gilts, many sired by above boars, and bred to the opposite line. Also young stock from spring litters. All hogs double treated—spring pigs single treated.
6 high-grade Percheron and Clydesdale mares, fillies and 2 horses, 350 chickens, ducks, geese and turkeys, 29 Dorset sheep and lambs. Case 9-18 tractor, Ford and Pierce-Arrow trucks, Dodge runabout, 5 H. P. motor, 2 gas engines.
95 acres of growing corn, oats and grass, 100 bu. oats, 250 bu. corn.
3 hay wagons, cattle wagon, 3 manure spreaders and complete list of farm machinery and equipment.
22 poultry and hog houses—numerous small items.
Mr. Hanlon leaves for Australia about August 1st, and this is a complete dispersal without reserve, except on one animal. Lunch served. The Greenore Farm of approx. 150 acres is for sale as a whole or in divided form or will rent the mansion place of 53 acres with furnishings of dwelling. Details on request.
Detailed catalogue with full pedigrees of all animals mailed on request.
H. J. DAGER, Agent, Ambler, Pa.

Sunny Slopes

(Continued from page 202)

unmistakable honk of a siren. He held his breath to listen. It came again, a long continued wail, in perfect tune with the whining of the coyotes. He turned to the right and started over the hills in the wake of the call.

Over a steep incline he plunged, and paused.

"Thank God," he cried aloud, for there he saw a little round yellow glow in the cloudy white mist,—the Harmer Six, and Connie.

He shouted as he ran, that she might not be left in suspense a moment longer than need be. And Connie with numbed fingers tugged the curtain loose and leaned out in the yellow mist to watch him as he came.

We talk of the mountain peaks of life. And poets sing of the snowy crest of life crises, where we look like angels and speak like gods, where we live on the summit of ages. This moment should have been a summit, yet when Prince ran down the hill, breathless, exultant, and nearly exhausted, Connie, her face showing peaked and white in the yellow glare, cried, "Hello, Prince, I knew you'd make it."

She held out a half-frozen hand and he took it in his.

Car's busted," she said laconically. "Won't budge. I drained the water out of the radiator."

"All right, we'll have to hoof it," he said cheerfully.

He relieved her of the heavier wraps, and they set out silently through the snow, Prince still holding her hand.

"I am awfully glad to see you," she said once, in a polite little voice.

He smiled down upon her. "I am kind o' glad to see you, too, Connie."

After a while she said slowly, "I need wings. My feet are numb." And a moment later, "I can not walk any farther."

"It is ten miles to a house," he told her gravely. "I couldn't carry you so far. I'll take you a mile or so, and you will get rested."

"I am not tired, I am cold. And if you carry me I will be colder. You just run along and tell Carol I am all right—"

"Run along! Why, you would freeze."

"Yes, that is what I mean."

"There is a railroad track half a mile over there. Can you make that?" Connie looked at him pitifully. "I can not even lift my feet. I am utterly stuck. I kept stepping along," she mumbled indistinctly, "and saying, one more,—just one more,—one more,—but the foot would not come up,—and I knew I was stuck."

Her voice trailed away, and she bundled against him and closed her eyes.

Prince gritted his teeth and took her in his arms. Connie was five feet seven, and very solid. And Prince himself was nearly exhausted with the day's exertion. Sometimes he staggered and fell to his knees, sometimes he hardly knew if he was dragging Connie or pushing her, or if they were both blown along by the wind. Always there was the choke in his throat, the blur in his eyes, and that almost unbearable drag in every muscle. A freight train passed—only a few rods away. He thought he could never climb that bank. "One more—one—more—one more," mumbled Connie in his ear.

He shook himself angrily. Of course he could make that bank,—if he could only rest a minute,—he was not cold,—just a minute's rest to get his breath again—a moment would be enough. God, what was he thinking of? It was not weariness, it was the chill of the night that demanded a moment's rest. He strained Connie closer in his arms and struggled up the bank.

At the top, he dropped her beside the track, and fell with her. For a moment the fatal languor possessed him.

A freight train rounded the curve and came puffing toward them. Prince, roused by springing hope, clambered to his feet, pulling the little pocket flash from his pocket. He waved it imploringly at the train, but it thundered by them.

Resolutely bestirring himself, he carried Connie to a sheltered place where the wind could not strike her, and wrapped her as best he could in his coat and sweater. Then, lowering his head against the driving wind, he plunged down the track in the face of the storm.

(To be continued)

State College Agricultural Library

MAKING THE DAIRY PAY BIGGER PROFITS

About eighty-four billion pounds of milk are produced in the United States each year.

Of this total the butter industry consumes approximately thirty-four billion pounds.

But—approximately thirty billion pounds of the amount devoted to butter-making becomes skimmed milk—having practically no market as human food.

IF someone should come to you and say—"I have discovered a new way to convert your corn-husks into paper-pulp, or—"I can make a new fabric from your wheat-straw," or—"I have found a commercial use for the chaff from your wheat," you then would suddenly realize the value of new markets.

In such manner Hebe comes to you and says, "I have created a new and more profitable market for your by-product, skimmed milk. I have done this by restoring to the skimmed milk a fat content—the element it lacks to make it more desirable, and therefore more readily salable as human food, for certain purposes. This I have accomplished by scientifically emulsifying the fat pressed from the pure white meat of the cocoanut with the skimmed milk, creating a product that serves in the home as an auxiliary to the daily milk supply in cooking and for baking."

The utilization of by-products is a big problem in every industry. Gluten, coal-tar, gasoline and cotton-seed were valueless by-products until someone found a commercial use for them. Skimmed milk is the big by-product of the dairies—thirty billion pounds of it are produced yearly.

The greater part of this by-product, which science tells us is a highly nutritious food, is being fed to stock, when according to the Department of Agriculture it could be used to better and more profitable advantage as human food. Hebe points the way to marketing skimmed milk as human food. It is the first big effort in this direction.

You will ask the question—How is Hebe to benefit the dairy farmer who is not near enough to a Hebe condensery to sell his milk there?

Remember, the Hebe industry is only in its infancy. It will grow with every can sold. Every bit of advertising put out by The Hebe Company will exert a beneficial influence on the dairy product market as a whole. Witness the influence on the market by the sale of nearly four billion pounds each year to the ice-cream manufacturers. While not every farmer is within shipping distance of an ice-cream factory, yet every milk-producer benefits by the demand.

There is no camouflage about Hebe. It is produced, labeled, advertised and marketed for just what it is—"A Compound of Evaporated Skimmed Milk and Vegetable Fat," for cooking purposes. It is not a substitute; it is not an imitation. It is Hebe and nothing else. Hebe creates a distinct place of its own, separate from the general class of dairy products. In seeking and finding its proper place in the market, Hebe will prove a substantial benefit to the entire dairying industry, increasing the general use of dairy products.

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The Practical Farmer

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Hogs Make Good Corn Harvesters

By DANIEL PROWANT

WHERE the farmer has a large herd of feeding hogs that he wishes to fatten for market about the time corn is ready to go into the shock, or even a little sooner, it is a pretty good solution of the farm labor problem to let the hogs do some of the corn harvesting themselves. This practice has been becoming more popular with hog breeders each season, and with the present scarcity and high cost of farm labor we feel that the idea will be found more profitable and satisfactory this season than ever before. By proper handling a herd of feeding hogs can be made to fit themselves for market with very little labor, and at no more risk than if the corn was harvested and fed to them in the usual way. If the hogs are not allowed too large an area at one time they will not waste any of the corn, and as long as any sap remains in the stalk will eat the fodder as well as the corn.

It is usually safe to allow the hogs to start working on the corn as soon as it is well past the milk stage, or about the time the grains begin to dent. If the hogs have been running on pasture and are not accustomed to grain feeds it will be safer to do a little preliminary feeding before turning them into the field, as they are apt to eat too much when not accustomed to it, and this has been known to cause bowel disorders. When this is the case it is best to begin feeding two or three jerked ears of corn per hog for about a week previous to the date when the hogs are turned into the field. In this way the hogs become gradually accustomed to the green corn, and no bad results will follow. It is a good plan to keep a box of charcoal or slack coal to which a little salt is added where the hogs can get to it at all times, as this helps to keep the stomach and digestive organs sweet and in healthy condition.

It is usually best not to allow the hogs too large a territory to work on at one time. There are several reasons for this. If the hogs are allowed to feed on too large an acreage they will likely waste more than they would on a smaller patch. Also it sometimes happens that a spell of extremely wet weather sets in at this season of the year, and may make it necessary to bring the hogs in from the field, and, of course, no farmer wants a 10-acre field half eaten up, for it is extremely difficult to harvest the corn after it has ben partly hogged down. Another reason for this is that market variations may cause the owner to wish to sell sooner than he had planned for, and if this happens to be the case he does not wish to hold his hogs and watch the market drop because he has them working over so large an acreage that it will take them ten days or two weeks longer to clean it up properly.

Most farmers in this section prefer to fence off about what they think the hogs can clean up properly in a week or ten days time. But little work is required to do this. All that is necessary is to have enough woven wire hog fence to reach across the field. No posts of any kind are needed unless the owner wishes to do so, and it will not be necessary to stretch the fence, as it is only to remain for a short time. Simply tie the hog fence to the fence at one side of the field, unroll the wire and set it up against a row of standing corn and tie it to the fence at the far side of the field. Then take some binder twine and tie the top and bottom wires to the corn stalks at about every third or fourth hill, or about the same distance if the corn is sown in

These little porkers are willing, and getting ready, to turn your corn into gold with the least labor for you. Give 'em a chance!

drill rows, and the temporary fence is complete. It does not look as if a fence of this kind would turn hogs, but it will, for the simple reason that they have all they can eat, and are too lazy to make any effort to get out.

When the hogs have cleaned up the first area assigned to them and the owner wishes to have them harvest more of the field, all that is necessary is to untie and roll up the fence and repeat the first operation. In this way the hogs not only assist greatly in harvesting the corn crop, but take care of themselves at the same time. It is simply a little matter of instead of working for our live stock all the time, make them work for us once in a while. An additional matter that might be worth mentioning is that a system of this kind keeps the soil in a high state of fertility and will produce better crops in years to come without the use of nearly so much high priced fertilizer as would otherwise be required, as every bit of fertility goes back to the soil at once, whereas in too many cases the manure is not properly looked after if the stock is fed in feeding lots or about the barn, and much of the available fertility is lost. This system of feeding will work just as well with rye and some other small grains, such as barley and speltz, and should be followed one year after another if results in the way of soil fertility are wanted.

Ohio.

Practical Forestry

CLIFFORD E. DAVIS

STRIPPED of its technicality and long drawn out preamble, the renewing of our timber supply, now nearing the vanishing point, is easy if every farmer will give a few odd days to the work when the weather prevents other farming operations. On every farm there are steep hillsides, odd nooks and untillable areas where a few trees can be grown. Never mind if you never live to see the trees become saw-logs; the fun of seeing them grow, and knowing that you are leaving the world better off is a lot of satisfaction to the normal man.

The chief timber wanted is oak, walnut, elm, etc. A walnut planted a few inches deep will grow a foot high in a year. A quicker way is to hunt out and transplant straight young shoots from the woods and fields. Often in plowing, fine, well-rooted young trees have to be dug up and thrown away, when they should have been transplanted in the fall or early spring. I have seen tons of fine, thrifty young trees of all kinds, from two to six feet tall, thrown in brush piles and burned.

Along all public roads trees should be set at intervals for shade. In my county we once had a fool road supervisor who cut down all shade trees on both sides of the road for ten feet back, for miles, and in summer a hotter, more fly-infested road for tired horses never was. The shadeless pasture has the milkless cows; and the treeless streamlet is the waterless run in hot weather. There really ought to be a law compelling the farmer to set or plant at least ten trees each year.

Practical forestry does not stop at setting trees, but goes on to the prevention of forest fires, careless burning of brush and refuse in the fields, keeping cattle out of the wood-lot, the cutting out of dead timber and the elimination of all waste in discarded tree tops, stumps, old logs, etc. When the average farmer wants fire-wood he cuts green timber regardless of its commercial or economic worth, when the myriad old logs, dead timber, stumps and crooked saplings would not only burn better, make a hotter fire and save the growing timber, but would make available potash of what would otherwise be a waste.

Again, the treeless farm is the birdless one, and also the one swarming with bugs, worms, etc., for

(Concluded on page 210)

Help Wanted

WILLIAM H. BARR
President the Inter-Racial Council

"LABOR is still continuing to leave the country, and all third-class accommodation is booked up until the end of July. The Red Star Liner Lapland leaving tomorrow for Antwerp and the American Liner Manchuria sailing on the same date have 1,700 passengers each in the steerage."—New York Times, May 7th.

From all parts of the country comes the call for agricultural labor. "Help wanted," is the general cry. The farmer is shorthanded, and unless he gets relief we may all go hungry before long. From such widely separated fields as the cotton plantations of Alabama and the maple sugar groves of Vermont, from the wheat fields and the dairy farms, the need is the same; the lack of strong muscles and willing hands is curtailing production on the farm.

The reduction of potato acreage threatens a shortage. Don't neglect spraying

Probably every farmer who reads this statement will admit that he is in the same situation, that he could get more land under cultivation or produce more bushels to the acre if he knew where to get a few able-bodied men to roll up their sleeves and help him out.

Strong, not only in odor, but in food and money value

What the reader may *not* know is that this is a national condition. All parts of the country are bidding against each other for workers and more workers, and this applies to industry as well as agriculture.

Just to indicate how every section of the country has been hit by the scarcity of farm hands, I will summarize a few press reports that have come to my attention: Farm production in Michigan will be seriously reduced in 1920, chiefly because of the inability of farmers to obtain competent labor, high costs and the attraction of high wages in cities. The state lacks 24,900 farm hands, and approximately 11,537 farms will not be worked this summer, a decrease of 15.8 per cent. in cultivated lands in 1920, as compared with 1919. Many acres are being seeded down, and in practically every section crops are planted that entail the least amount of work to harvest. Dairy production in the last year has decreased 11.3 per cent., while not a county reported any increase in dairy cows and diarymen are reducing their herds.

The South is likewise shorthanded; in Alabama and Georgia whole plantations will not be put under cotton this season but will be planted to velvet beans which will be plowed under for fertilizer. One reason for this program is the actual scarcity of labor, and another is the extreme independence of the workers. It is said that some wealthy planters have refused to consider the alleged exorbitant demands from their help and have put thousands of acres under cover crops. Similar conditions are reported from Mississippi.

From the northeastern states comes the same call for help. Although seasonal conditions were favorable for a good production of maple sugar, thousands of trees in Vermont went untapped this year because of the shortage of farm labor. Never before have the farmers been so anxious to make a good sugar production, but in most cases they were prevented from tapping their full number of trees because of the inability to take care of them all with the labor available. Generally speaking, operations were limited to what the farmers could manage with the labor of themselves and their families.

While there is serious shortage in the cities, *twenty-four thousand vacant houses were found on farms in New York State.* This indicates that 35,000 men and boys have left the farm in the course of the year to enter other industries.

Similar descriptions of curtailed production were given at the recent National Conference on Immigration in New York, called by The Inter-Racial Council. At this gathering of bankers, industrial men, farmers, educators and leaders of the foreign-born groups, the requirements of the farmer were presented by employers of agricultural labor.

Mr. C. F. Seabrook said: "The Seabrook Farms Company has about three thousand acres of land in Southern Jersey which they farm intensively. They have employed in the past about three hundred men and women, about 70 per cent. men and 30 per cent. women. Because of additional acreage, about fifteen hundred, they will need five hundred men and women. In acquiring these fifteen hundred acres, this company purchased forty farms from forty different farmers, and in every instance the farm was occupied, prior to purchase, by its owner, and the reason those farms were sold was not because of an excessive price, but because the owner of the farm realized the difficulties of the labor question. We know that this year the farm production will be at least 80 per cent. below that of last year. You do not want to buy our produce on a basis of production on your time—city time and wages. You will either have to buy it that way, or you will have to help us get more labor."

The solution of this problem was indicated in Mr. Seabrook's statement: "We have found that the Italian, the German and in some cases the Jew, have not only been good men in our employ, but they remain with us and are successful; they save their money, and as a result of this employment we have in our country hundreds of Italian, Jewish and German farmers owning their own farms and working their own farms with help of their families."

Another practical farmer, Mr. M. J. Peck, of Marathon, N. Y., said: "I have employed in the last few

(Concluded on page 208)

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JULY 1, 1920

WE are still receiving occasional letters from readers asking for literature on the Victorious Life, concerning which we wrote in this column several times some months ago. These letters, like the many received at the time the editorials appeared, breathe a consciousness of an incompleteness in the Christian experience of the writers, a lack of the joy of victory which they some way feel should be theirs. So strongly and earnestly have these friends expressed their longing for the experience of real victory in their lives that we are emboldened to offer a suggestion that, even at the expense of great inconvenience and very considerable sacrifice, they take advantage of an opportunity which presents itself right now to get to the bottom of this wonderful truth of complete victory in Christ which is theirs—and ours—for the taking.

During this month occurs the annual Victorious Life Conference at Stony Brook, Long Island (53 miles east of New York City). It was attendance at this conference last year that inspired the articles in this column above referred to, and opened up an experience for the writer more wonderful and satisfying than anything he had ever known before. Because last year the accommodations available were not sufficient to provide for the many who wished to attend, there will this year be two conferences instead of one; the first will open on Saturday, July 17th and close the following Friday, July 23rd; the second will begin on Saturday, July 24th and continue until Friday, July 30th; the programme of the first conference will be practically duplicated in the second.

Of course, this is a busy season of the year for every member of a farmer's family, but we can think of a number of circumstances under which a way could be found to spare one member of the family even at this time. Could anything so fully justify a sacrifice of time and convenience as an opportunity to open up for the whole family a new experience of victory and joy in life that is real and enduring? Then, too, it may be hard to spare the money for this trip, but if it can be managed in any way (and the expense of attendance at these conferences is comparatively small) the writer feels confident it will prove *the best investment that any one of our readers has ever made.*

Can't it be managed, then, to send a delegate from the family to one of these conferences? Write *at once* for a programme and particulars as to accommodations and expense to The Victorious Life Testimony, 600 Perry Bldg., Philadelphia, and then figure it out—*and pray over it.* EDWARD T. WALKER.

Co-operative Dairymen

DAIRYMEN everywhere will watch with great interest the development and success of the project just announced by the officers of the Dairymen's League, Inc.

It seems that twelve farmer owned country milk plants are already being operated by the Dairymen's League Co-Operative Association, Inc., which is the name of the organization formed to carry out this project, and campaigns are under way to buy existing plants or to build new ones in thirteen widely separated sections in League territory, most of them being in New York State, of course. The new projects call for raising nearly $4,000,000. Most of this amount at the outset, and eventually all of it, will be subscribed by the farmers themselves in the various localities.

This co-operative plan is financed by a "revolving fund" method. The farmer upon becoming a member of the Association receives certificates of indebtedness bearing 6 per cent. interest, for the full amount he subscribes. These certificates are payable in equal installments of 20 per cent. each year for five years. During this period just enough is set aside from the amount due each farmer for the milk he delivers, to retire his certificates with the interest, as they become due. As security for these deductions, which in reality are loans to the Association, new certificates of indebtedness payable with interest in five years, are issued to the producer.

Thus at the end of the first five years he has received back all the money he originally invested, together with interest, which totals $180 for each $1,000. He has, of course, been receiving, during this time, for his milk what it is worth to the Association, less the amount deducted to retire the annual certificates and interest charges.

From this time on the farmer's investment really consists of a portion of his milk, which he has put into the business. He holds securities for this and, of course, he gets his share of the proceeds of the co-operative concern.

The plants include milk shipping stations, butter and cheese factories and places for the manufacture of condensed, powdered and evaporated milk and other milk products, the scope depending on the needs of each locality. The intention, we understand, is to go slowly and develop the plan one plant at a time and to establish plants only in those sections where the best interests of the farmers require them. This is wise, as the great factor in a project of this kind is, of course, good, efficient management, sufficiently conservative not to try to do things too fast.

The Backbone of the Nation

THERE is much significance in the tribute paid to the farmer in the platform of the Republican party—the only one of the two great parties which has held its convention at the time this is written.

Six farmers' planks were presented for consideration to the platform committee of the convention by accredited representatives of the National Board of Farm Organizations. Four of these were promptly adopted in practically the same words in which they were offered. The other two asked that the party pledge effective national control over interstate combinations of capital engaged in manufacturing, transportation and distribution of food, farm products, etc., and that agriculture be accorded the same consideration in tariff legislation as is accorded to other interests. The latter of these is treated very satisfactorily in the international trade and tariff plank when a pledge is made for the "preservation of the home market for American labor, agriculture and industry." Furthermore, the party goes on record as believing in a national inquiry (which must naturally come before a "control") on the co-ordination of the various transportation facilities for receiving, marketing and handling food; also it believes in making an end to unnecessary price fixing and ill-considered efforts arbitrarily to reduce prices on farm products.

Satisfactory as these pledges are, we believe the real significance of the farmers' recognition lies in the opening paragraph, which reads:

"The farmer is the backbone of the Nation. National greatness and economic independence demand a population distributed between industry and the farm and sharing on equal terms the prosperity which is wholly dependent on the efforts of both. Neither can prosper at the expense of the other without inviting joint disaster."

The farmer does not go to Washington to seek favors or special privileges. All he wants is a square deal. He does not ask to have the laws made in his favor, but he is tired of being ignored when they are made. He is tired of the old idea that industry is the only thing to be considered, and that the farmer will get along by himself—just because he always has. As long as people live on food he is at the very least an equal partner in the general scheme of things and there is no reason why he should accept any other position.

They were fair with the farmer at Chicago. We hope they will do as well at San Francisco.

A farmer who has faith in his calling even when many problems perplex is the one who is most likely to succeed.

Bulletin Helps for Farmers

Rabies or hydrophobia in animals is a disease greatly feared by all of us, but positively recognized and understood by but few. Let's not raise the cry of "mad dog" when there is none, or fail to know one when he is among us, since our U. S. Department of Agriculture offers an authoritative treatise on the subject. A revision of Farmer's Bulletin No. 449 has recently been issued and may be had for the asking.

A lot of farmers will be glad to know of a new bulletin concerning "The Stable Fly," telling how to prevent the annoyance and live stock losses chargeable to this pest. It's Farmers' Bulletin No. 1097—21 pages, fully illustrated.

Many eastern farmers who have been thinking of raising sheep but have hesitated because of a lack of knowledge of the necessary equipment for this branch of animal husbandry and its expense will welcome the full information on the subject contained in the newly revised Farmers' Bulletin No. 810, "Equipment for Farm Sheep Raising." It contains pictures of, and plans for, barns, open sheds, hay and grain racks, lambing pens and creeps, fences and hurdles and miscellaneous equipment.

"Selecting a Farm," while a bulletin primarily intended for the prospective purchaser, may be read with profit by the present owner of a farm or the prospective seller. It's a good thing to know how one's farm measures up to the requirements of the wise buyer, and a bulletin of this sort is a guide to what improvements on our property and in the neighborhood enhance the value of our investment. It is Farmers' Bulletin No. 1088; 27 pages and several illustrations.

"Fire Prevention and Fire Fighting on the Farm." Have we all exhaustively studied this vital subject and made careful preparations to head off this enemy and to fight him if he gets by our first line of defence? If not, today is the day to write for Farmers' Bulletin No. 904 and start a campaign of preparedness.

Any of the foregoing farmers' bulletins may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

Under the title "Cull the Flock," the Agricultural Experiment Station of the University of Wisconsin (Madison) issues an illustrated guide to poultry raisers to cutting the boarders out of the yard. It is worth careful study. If you write the Station for it, ask for Circular No. 123.

Grading Vegetables for Market

CHAS. A. UMOSELLE.

Every year sees the work of grading cutting a larger figure in the work of marketing vegetables than it did before. Grading was once unknown. Today the producer of fruits and vegetables is following close upon the trail of the manufacturer who long ago realized the necessity of uniformity. The citrus people took the lead in this. The western apple shippers were next, with the vegetable shippers close upon their heels. The progressive market gardeners are now awake to the fact that two gnarled cucumbers cut the price of the whole package. Hundreds of growers are still asleep.

Every man and every community must make its own plan of grading. What suits one market does not suit another. Many are discouraged in setting the standard high because the lower grades are becoming increasingly difficult to sell. We had to discard a considerable proportion of the second grade tomatoes at our farm the past season, but it paid. At one time ordinary run-of-the-field fruit was bringing fifty cents a basket. Our primes sold at $1.50 and seconds at thirty-five cents. Seconds are not wanted in large quantity on most markets. Many hold that the moral of this is, "Don't grade. If the consumer doesn't want seconds, make him take them with the best." But the *true* moral is, "Don't grow seconds." Of course, there will be some inferior fruit, but if by selecting a well bred strain of a good variety, and by giving the best of culture, we can reduce the seconds to very low proportions, we will not mind leaving a few culls in the field.

One of the most common mistakes in grading is in reducing the standards when the price drops. When markets are glutted the question ceases to be one of securing a high price, but it becomes a question of moving the crop or letting it rot. People continue to use the product, and that in large quantities. They are willing to pay a price which will cover marketing cost and a good share of production, but the question is, which grower sells and which does not? Naturally, the one with the best sells. The following appearing in our trade papers last season, furnishes good evidence on this point: "Lettuce from state points has been in free receipt, and much has been sold for less than charges. Fancy heavy-headed stock is worth $1.00 to $1.50 a bushel, but average grades neglected at fifty to seventy-five cents a package." The time of over-supply is the time when grading counts. The grower has established his trade on a basis of quality, and by maintaining that basis he is able to hold on while the other fellow drops out. Moreover, Mr. Grader still holds the trade when the market picks up.

It is by no means easy to maintain a standard of grading. One naturally desires a maximum of primes and a minimum of seconds, and he even unconsciously tends downward. With hired help, the problem is much more difficult. The first essential is to form a mental image of the standard for each grade, working it out carefully and making it neither too high nor too low. Fix these standards as far as possible by the use of sizing boards and the like. Constant and rigid inspection is then necessary. *New Jersey.*

Help Wanted

(Concluded from page 206)

years from 25 to 100 hands. Up to three years ago I had no trouble in getting labor, as I paid even more than the other farmers in that locality, and the men I hired seemed to realize that they could get more with me than they could in the city, after paying all the city expenses.

"Three years ago I went out of the farming business and until the last year have been out of it. Now I have taken over the Lovell Farms as manager. I have three hundred and fifty head of cattle, and just enough to barely keep that dairy going. I haven't men enough, however, to raise the necessary crops to keep the dairy this coming winter. If you can't arrange to give the farmer the help to grow his crops, you are going to hear about it later."

Now what are we going to do about it? To cut down production on the farm would be a national calamity. It would be little short of economic suicide.

What other remedies can be found?

Various solutions have been proposed. A prominent industrial statistician declares that "Labor is short. Such figures as we have indicate a degree of employment almost up to the busiest month of the war. It is going to be that way until depression hits us. Then we are going to have the normal unemployment figure from 5 to 8 per cent., and perhaps even calamity percentages running to 10 to 15 per cent. Returning prosperity is going to again give us nearly our present labor shortage. It is going to be a permanent feature of American industry in prosperous times."

His solution is the use of labor-saving machinery. The plan has merit, but remember that it is going to take lots of time to produce that machinery, and *much labor will be required to manufacture it and distribute it. And labor is short.* Another solution of the problem is this: The Council of National Defense is reported to have urged the curtailment of non-essential industries through government action, in order to divert labor to farm work. Among these "non-essential" industries was included road building.

If such a vitally important work as road building is classed as "non-essential," it can be seen that such a proposal might result in confusion and disturbance of business that would make the cure worse than the disease.

Now as to the real remedy. A solution of the problem of labor shortage on the farm was brought out at the National Immigration Conference, a remedy which is so logical and promises to be so effective that every employer of labor will want to consider it. Briefly, it is to encourage the right sort of immigration and make America a desirable place for the immigrant. We can make the immigrant want to stay here and help build up the country only by a complete change of heart toward the foreign born.

It is a good idea to cease calling the immigrant worker by such names as "hunkie" or "wop." It is still better to cease to *think* of him in that way.

When we stop to consider the great share that the immigrant had in building our country, fighting our battles and supporting our liberty loans, it is an unwarranted insult to either despise him or to patronize him.

Yet in our laws we discriminate against the alien in many ways that are humiliating and irritating. For instance in some states he cannot keep a dog, he cannot get a job on public works, he cannot secure state compensation if he is injured, and frequently his schools and meeting places are raided and his newspapers threatened with suppression. At the same time he is told that in America all are equal before the law and that the Constitution guarantees a free press and free speech.

The individual farmer can help secure labor for his fields if he gives the immigrant a square deal when he gives him a job, treating him with the same consideration that the native American receives.

Through their organizations, farmers can help the foreign born labor situation by urging Congress to pass more scientific immigration laws, and to create a federal board of assimilation which will help distribute immigrant workers to the places where their services are in demand, protect them against fraud and help educate the foreign-born in our language, history and ideals.

Bills are continually being presented in Congress and the state legislatures which attempt arbitrarily to prohibit or restrict immigration, and other ill-considered measures are proposed which tend to harass and humiliate the foreign-born living here. The farmer can help defeat such vicious legislation by making it clear to his representatives that he is in favor of the traditional American ideal of welcoming the immigrant worker who comes here to better himself and lend his strength, energy and ambition to help build a bigger, finer America.

When the immigrant is made to feel welcome in America the steamships will be carrying workers to this country as in the past. There will be a man for every job, and if we tackle the problem with forethought, a job for every man.

It would be disastrous to leave this important matter to take care of itself. The tide of immigration that has turned away from us will not flow again toward America without our active help. There are two good reasons for this. First, that the immigrant of today is leaving home to better himself financially. The time is past when America was the *only* place of refuge for those who sought religious toleration or civil rights. Republics have taken the place of despotisms in the Old World, within recent years, and their citizens do not have to come to America to find liberty. The second reason for this is that other countries have been actively bidding for the type of labor that formerly came here. Such lands of opportunity and natural wealth as Canada, Australia, New Zealand, Argentina and Brazil are offering inducements that are very tempting.

Their paid agents are stationed abroad with the object of securing agricultural workers, to whom they offer free passage (or reduced rates) and exceptional opportunities to secure land and get it under cultivation. Argentina gives free land to immigrants and is drawing French, Italian and Spanish peasants. Chile gives 100 acres and supplies agricultural implements as well. Brazil offers free passage and assistance in getting started. America offers indifference, racial prejudices and misunderstandings.

No doubt there are abundant opportunities in this country for the foreign-born worker who is aggressive enough to overcome such obstacles, but it is poor salesmanship on our part to discourage the immigrant when other nations are bidding so vigorously for his services.

For our own interest, if for no higher reasons, it is time for us to change this and, as a nation and as individuals, give the foreign-born the kind of treatment we should wish to receive.

Does Wheat Turn to Cheat?

Will wheat turn to cheat? This is a question many farmers ask at this time of year.

Chess or cheat is a weed itself, it is explained, and a wheat plant never changes, but the cheat is often found in places where wheat is frozen out or destroyed in some manner.

The cheat seed resembles shriveled wheat to some extent, which accounts for the belief that there might be some similarity in the two plants.

Chess or cheat usually gets into the wheat field by using unclean seed wheat, or sometimes is carried by overflow water into the wheat field. It also propagates itself in fence rows and along roadsides.—*Ohio Ex. Station.*

Farmers Plan for Inspection Trip

Suffolk county (N. Y.) farmers plan an inspection trip on July 12 and 13 that will give all persons interested in potato growing in the northeastern states and Canada a chance to see the potato industry of Long Island.

This county uses seed from many sources in the New England States, New York, New Jersey and Canada; the trip will show comparison of crops from seed potatoes from these various sources, as they grow side by side in the field. The principal demonstration fields are at Mattituck and Bridgehampton. At Southold and Riverhead opportunity will be given to see the potato fertilizer experiments of the federal department of agriculture and the plant disease field laboratories conducted in co-operation with the New York State College of Agriculture.

It is also announced that the trip will have entertainment features, including shore dinners. The farm bureau office at Riverhead asks that all prospective visitors should notify the office not later than Saturday, July 3, so that accommodations for all can be arranged.

The better the farmer, the less sure is he that he has heard the last word on efficient farm management. There is no business in which more time and thought are being expended for finding better ways than in agriculture.

The nine principal field crops, that is, winter wheat, corn, rye, oats, buckwheat, barley, tobacco, potatoes and hay, in Pennsylvania, for the year 1919, are valued at $369,714,400.

Home-Made Auto Trailer Aids in Light Farm Hauling

G. H. D.

In many sections of the agricultural United States the motor truck as a routine vehicle for farm hauling is not used because the average farmer does not use such a facility often enough throughout the year to justify the expenditure of from $50 to $250 for an equipment of this variety. However, in practically all the farming sections where the roads are good throughout the year, the majority of farmers who can afford such conveniences have touring cars or roadsters. Good roads and the automobile reduce the distances to town and market one half or two thirds what they formerly were when dobbin power was the only means of locomotion from farm to town. The writer wishes to suggest the feasibility of combining pleasure and business by yoking the touring car to a simple, home-made trailer and hauling light loads of from 500 to 600 pounds, both from and to town, whenever trips are made and produce and supplies are to be sold or purchased.

An inexpensive, serviceable and satisfactory trailer cart may be made by the average farmer or the local blacksmith from two stout buggy wheels and an axle by bolting two iron rods to the axle, respectively three inches from the hub, so that they extend forward to form a wedge and join with a third rod fastened perpendicular to the axle and parallel to the ground to form the tongue, which can be fastened readily to the rear running gear of the auto. It is necessary to make a small box or frame of wood, which can be bolted to the trailer skeleton, in which to carry the materials hauled. At the most such a simple trailer will not cost over $10, while it will stand the wear and tear of travel at twelve to fifteen miles an hour. It saves the back seat of the automobile from hard usage as, ordinarily, the farmer stows away the light loads he has to haul in the rear of the car.

If the home-made trailer is used only around the farm, its efficiency will be adequate to justify its existence. It is excellent for the hauling of milk and cream to the factory or for carrying seed grain, repairs or what not to the distant fields. Its uses are so manifold that there is no need to enumerate all of them to the resourceful farmer who, if he will only build one of these handy tools, will find a hundred and one odd jobs for it to perform when it is completed.

Some farmers use a stub tongue in their light farm wagon and haul it as a trailer behind the automobile, but generally the depreciation in the wagon is rapid where it is much used in this manner, as such vehicles are not built to stand the strain of country travel at a pace of twelve to fifteen miles an hour over all sorts of roads. The home-made two-wheel trailer cart is much better designed for work of this character, while it is easy and inexpensive to repair in case of accident or breakdown.

In sections where the roads are good, where many of the local farmers own automobiles and where a county farm bureau exists, the writer also wishes to recommend the formation of a rural fire fighting company for the protection of farm property against destructive conflagrations. A stout two-wheeled trailer cart of the type discussed above could be kept at each central cross roads in the county, fully equipped for active service with chemical fire extinguishers, wet sacks, hoes, forks, rakes, shovels, water buckets and other devices for combatting fire. Whenever an alarm of fire is given by telephone and help is requested to come to such and such a farm, the autoist who first passes the crossroads where the fire cart is stationed would be pledged to hitch to this fire wagon and haul it to the farm where the fire was reported. Other farmers who belonged to the organization would be expected to drop all work posthaste, as soon as the call of fire reached them, in order to rush to the aid of their neighbors in quelling the flames. Fire carts of the type described would not cost much while the annual saving in farm buildings, grain, livestock and human lives which they might effect, would easily repay all such expenditures.

A Dollar for a Woman's Idea

How do you make home "homey"? How do you make your family and yourself more comfortable and life on the farm more attractive?

These are questions that thousands of other farm women are asking you who are making a *success* of the farm home, and The Practical Farmer wants to be the medium for carrying your answer. To do this we propose to make our August 1st issue a sort of "Home Makers' Number."

You've *discovered* things, Mrs. and Miss Farmer, about home making, that some of your sisters on the farm know nothing about. Maybe it's about heating or lighting your home—or about a desirable water supply system. Maybe it's about floor coverings, or conveniences in home-made (or easily obtainable) furniture or fixtures for the kitchen or other part of the house. Maybe it's about paint or shrubbery or flowers, or something else to beautify the exterior of the home. Or perhaps it's some special kink in clothing to make the children more comfortable, or a trick in cooking to gladden the "tummies" of the household. Or perhaps—well, you know—there are a thousand things that help to make home "homier" and life more livable; we want to know about any of these and you pick out the one—or ones—you can best tell about.

Just write us a letter about it in your own words; we won't limit you on length, but suggest that you make your letter as long as is necessary to tell your story fully—but no longer; that is, don't *waste* words. Each letter should treat of a simple phase of the general topic of home making; if you have several things you'd like to tell about, write a separate letter concerning each.

We will pay $1.00 for each of these letters we publish in the Home-Makers' Number. We would like to publish about 25 of them—but perhaps we will use more, or possibly fewer, depending on their length and acceptability. Contributors are *not* limited to one prize—we will pay a dollar for each letter published without regard to who writes it or how many others we have accepted from the same writer. How many prizes will *you* win?

All letters should reach us by July 15th to have consideration. But don't wait until the last moment; if you have an idea *now* jot it down and send it along; if others occur to you later send them then. But "do it now" is a good motto to go by in this, as in many other things!

MAKING THE STONE PILE BEAUTIFUL

EDGAR L. VINCENT

THE men who worked on the road that runs past our home raked up the little stones which had accumulated in the track in the course of the travel over it and dumped them by the side of a little stream. It was not just the best place for these fragments of rock, although in one way they served a good purpose in helping to strengthen the bank of the creek against the rapid current which came down from the hills in time of a flood. But they certainly did not look very beautiful to the passerby, and we often wished there were some way to hide their ugliness.

Then nature came in to take a hand for us. Where did the pretty, wild clematis come from that began to clamber over that heap of dust-brown stones? We never had known that such a plant had grown anywhere near the place where this lovely thing made its appearance. But it kept clambering higher and higher toward the top of the pile, spreading out in either direction as it mounted, until at last we forgot all about the rough stones, happy in the beauty of the blossoms the vine put forth and the fragrance they shed.

Making the stone pile beautiful.

They lie along our pathway; on the farm, in the shop, behind the counter at the store, everywhere, these unsightly things make their appearance. Sometimes they come through the acts of others, and then we have so little patience with those who bring them into our lives; but oftener they are the fruit of our own faults and failures, their unloveliness the less apparent to us because they have their roots in our very heart of hearts. Whatever their origin, we know they are ugly and frightful to look upon. Whether they be little slights coming from those about us or open injuries heaped upon us by envious travelers on the world's highway, we shrink from them and go away around rather than come face to face with them.

Now, why do we not think of the lesson of the stone pile? Why not set out the lovely plants of forgetfulness of the slights, of forbearance extended toward those who wilfully hurt us, and let them trail their delicate vines up over the things that are so hard to bear? Like the clematis, hiding the ugliness of the heap of stones, love and trust and peace will in good time blossom and put away out of sight everything that would otherwise mar the joy and beauty of our lives.

And let us not wait till tomorrow about setting out these fine qualities which will in God's own time spring up and hide the harsh things and the bitter things so often the lot of us all, especially in these trying days that are just now passing. Today is the time, and just where we are the place. And the best of it is that some day He who watches and who knows, will sift over our piles of trouble the dust of which He makes better worlds, so that there will be no more heaps of stones, but mounds of sweet-smelling flowers and mosses of happiness never ending!

Practically all farm fruits require a consistent spraying program to insure clean fruit. The spraying program for peach trees must include control of scale insects, peach leaf curl, curculio, scab and brown rot. Practically the same insects and diseases that attack the peach tree must be considered in spraying for plums.

Harvest 20 to 45 Bushel to Acre Wheat in Western Canada

Think what that means to you in good hard dollars with the great demand for wheat at high prices. Many farmers in Western Canada have paid for their land from a single crop. The same success may still be yours, for you can buy on easy terms,

Farm Land at $15 to $30 an Acre

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IF YOU WANT to sell or exchange your property write me. JOHN J. BLACK, 118th Street, Chippewa Falls, Wis.

The Reformation of Uncle Bill

H. W. SANDERS

Of course the country has gone dry now, and Uncle Bill couldn't get it if he wanted to, but the point is that after his scaring he says he don't even want to, and even when Katie Masters and her brother made all the explanations possible, he still wouldn't believe that they weren't ghosts sent on purpose to reform him. Personally I think the bartender down at O'Shaughnessy's saloon has quite a part in the business—but here, I am getting all balled up with the story, so excuse me, folks, till I straighten it out and tell it from the beginning.

It happened a couple of seasons ago, when the local honey-crop was such a failure — you remember — and Katie Masters, who you all know as one of our best beekeepers, and a woman at that, mind you, decided to move her hives fifteen miles down the valley where things were more promising. The colonies were big and heavy, full of brood and bees, and liable to smother, so she arranged to move them right at dawn, when the air is cool and fresh. She hired Smith and his auto-truck and told him to be on hand at three o'clock prompt, and arranged to go out to the yard at two o'clock and fix the bees up all ready for the moving.

Just the day before, her brother blew in from the East for a vacation, and got all crazy about bees and beekeeping. He was telling everybody how grand it was to be getting next to nature, and what a fool a man was to keep shut up in an office all his life. He looked tolerable prosperous for a fool, anyway, and after the way things had been coming in the honey business the past season, some of us pretty nigh wanted to be fools, too. However, when he hears of this night's excursion to get the bees ready for the move, he wants to go along, and to cut a long story short, Katie fixes him up with a spare pair of female white overalls and coat she has around, and her second best bee-veil so he wouldn't get stung up, him not being inoculated as yet.

Now this is where Uncle Bill comes into the story—you know Uncle Bill that lives down in that shack at the end of the town. He says that way back in the prospectin' days he was a respectable man and only got pickled every once in so often, but that lately since the country got all crowded out with tourists and native sons and such like, what with newspaper men coming out for dope to concoct their pioneer stories from, and movie scenario writers coming around to try to comb a few new notions for the movies out of him, that he positively gets treated to more than is good for his health. Says his greatest curse is his tongue, and that if all the true stories he told them writing chaps had really been so that he would have been killed several times over.

However, as I said before, Uncle was down at O'Shaughnessy's saloon telling all about how he once skinned a newcomer out of all his money, at a game of craps, then how he won the other fellow's gun, then his boots and finally, when he had nothing left but his shirt to put up, a cow fell in through the roof of the dug-out and upset the table, and in the confusion the fellow knocked all the stove pipes down and scared them to death by looking out from under the bed with a black face. When he had done, the bartender tries to get the old boy started again by telling an account of his native town in Ireland where the "divil himself" hid in the graveyard, and pounced down upon an uncle of his who kept a public house (that's what they call a saloon in Ireland), and told him that he was ruining his neighbor's constitutions by the fierce liquor he sold, and unless he'd change his ways he would get his principal warder to bring some of the victims right up from purgatory to prove it. But uncle wasn't to be drawn out. He had reached just that state of intoxication where he'd always go suddenly silent, and start for home, for Uncle's ways were steady and his habits as regular as the sun himself.

He calls for a drink all around the house, and pays for it, and then toddles off home, muttering to himself that he wouldn't be scared no matter who came around telling him tales like that. He says that if the "Divil" or any warder, or any other Irishman, comes around trying to frighten him, he'll let them know where they are getting off at, and quick, too—quick, quick, you bet you, quick!

Down the road he trots and just at the bend where he ought to turn off to his shack, something takes his attention and he turns away to see what it may be. I don't know just what it was, but anyway, it gets him off the beaten track, and Uncle was just tipsy enough to be able to lose himself entirely in about twenty paces. He goes on and on, trying in a blind sort of a way, to find out where he might be, and eventually where should he land but right in the middle of Katie Master's apiary. He bumps into a hive, turns and bumps into another, turns in another direction and bumps into another.

"I'm losht in a 'pen'trable foresht," says Uncle Bill, and lies down right there and goes fast asleep.

* * * * * * * * * *

When he woke up, he felt pretty cold, and wondered where on earth he might have got to. The first unearthly light of dawn was coming over the hilltops and the hives all around him looked white and eerie and vague. He thought they were tombstones and that he was in a cemetery, and he struggled to his feet and then sat down on a hive, for the whisky was in his head yet to some extent. He fell to thinking of all the men who he had seen die a sudden and fearful death in the wild days of long ago, and he remembered the tales in the saloon the evening before, till he was starting to feel kind of queer and figured he'd best be getting home. And it was just here, at this particular point, that he got the shock that is having its effect yet.

From in between the trees at the far side of the yard appeared two white figures, with floating clouds of white all around their heads, and black faces. He knew what they were, you bet; they were dead folks that had come back to warn him of the evil of his ways. And Uncle Bill fell down on his knees and began to pray in a loud voice. "O Lord," he began in a tremendous voice, and then he couldn't think of how to go on. "O LORD," he began again. O LORD, he yelled.

* * * * * * * * * *

"What on earth is that"? says her brother to Katie.

"I don't know," says Katie. "Go and see."

"You go," says gallant brother.

"No, you go," says sister.

Just at this moment Uncle starts praying, and brother beats it. Things were getting a little too swift for his delicate office-nurtured nerves. Katie is a pretty stout girl, but the situation gets a bit too much for her, too, and she goes back to see where brother may have got to. Uncle gets the idea that his prayer has received the prompt attention it merited, and he beats it, too, and when Smith and the truck arrives he says it is just like a woman, to bully him about being in time and then to have nothing ready. So he goes home for a bite to eat and phones that he can't come that day, and will tomorrow do?

And the best of it all is that Uncle has gone strict teetotal since that day. He bulls a whole lot about his strength of mind and self-control, but those who have been around when the old man gets a bit intimate say that he believes heartily that he put up a mighty effective prayer that night in the cemetery —for he always maintains that he was in the buryin' ground at the other side of town, and never near Katie's place at all.

Don't that beat sixty!

God Give Us Men

JOSIAH HOLLAND.

God, give us men! A time like this demands
Strong minds, great hearts, true faith and ready hands,
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor; men who will not lie;
Men who can stand before a demagogue
And damn his treacherous flatteries without winking;
Tall men, sun-crowned, who live above the fog
In public duty and in private thinking.
For while the rabble, with their thumb-worn creeds,
Their large professions and their little deeds,
Mingle in selfish strife, lo! Freedom weeps,
Wrong rules the land, and waiting justice sleeps!

Save Early Maturing Cockerels for Mating

Even though prices may be good, poultrymen are cautioned by specialists at the Ohio State University against selling their largest and best looking cockerels as broilers. These, it is said, should be saved for breeding stock and should be picked out now rather than making a selection in the fall.

Trap-nesting experiments show that, when hatched at the same time and raised under the same conditions, the early maturing cockerel is the son of the high producing hen, and his daughters make high producing hens, whereas late maturing cockerels are the sons of the poor layers and their offspring are likewise poor layers.

It is a good practice, however, to sell other cockerels as soon as they reach 1¼ to 2 pounds, first because they have reached the maximum size of economic gains, and, second, because the price per pound for that size early in the year is so much higher than in the fall when the market is glutted.

Getting Out Broken Posts

When a post decays it usually breaks off about the ground level. Before a new post can be set, the stump must be gotten out of the hole. If it is dug out it consumes considerable time and labor. A quick and easy way to get out a broken post stump is to drive a hole with a pointed steel bar down alongside of it. The hole should go down a few inches beyond the end of the post. Attach a cap and a fuse to a half cartridge of any kind of dynamite and tamp the charge in the bottom of the bore hole. Shortly after the fuse is lighted, the stump hops out of the ground in a hurry. The hole is all ready for setting the new post.

Practical Forestry

(Concluded from page 206)

a bird seeks the farm with plenty of trees to nest in, and returns there; and some hollow limbs and trees there must be for those that dwell in holes, as bluebirds, wrens and woodpeckers.

Inaction, delay and simon-pure laziness are all that keep the farmer from thus renewing the forests, and the law should get a gad after him before we have to use herds grass for toothpicks.

Maryland.

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J. W. Connors, 3726 Locust St., Phila., Pa.

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Painting: What With and How?

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1296, AUG. 1.—What has the tractor done in your locality this year? The labor shortage has brought the tractor into prominence. Many farmers have bought but some haven't who might use a tractor to advantage. These want facts and figures from real experience. Tell us about your (or your neighbor's) savings from (or troubles with) a tractor in actual service *in all seasons.*

TOPIC NO. 1297, AUG. 15.—The value of the lightning rod as a protection to farm buildings against lightning is still questioned by some farmers. Have you had experience with lightning rods? If so, how long and what has been your experience and observation with farm buildings rodded and not rodded? Give a description of your rods, material composed of, cost per foot, etc.

Mrs. O. J., Rio, La.—No experience is necessary to do any ordinary job of painting. I have just finished our house, barn and outbuildings. Besides the economic value, the appearance of the farm is improved 50 per cent. In the selection of colors there are several things to be considered—the size of the house, its location and surroundings. A large house in an open field looks well in brown. The same color on a small house would dwarf it, or on one in a shady location would make it appear gloomy. Our house is rather small and in a moderately shady location, so we decided on Colonial yellow with white trim. The dealer sent green instead of white and we used it, and stained the roof to match. The combination is very pretty, reminding one of a yellow flower with a bright green calyx. Bright shades give size and prominence. For hot, sunny locations gray, drab, stone or dark green with white or cream for trim are pleasing colors. I have a prejudice against red either for house or barn, unless the building is of brick.

I made one mistake. I stopped work one day in the middle of a wall. Next day a very noticeable streak showed where I left off and began painting again. After that I did not commence a wall unless I had time to finish before stopping.

Experienced painters may mix their own paints successfully, but I think the amateur had best stick to the ready-mixed article, which costs very little more. In painting pine it is well to go over and wet all knots and fatty streaks with turpentine. This melts the resin which would cause the paint to soon peel off. Wood should be thoroughly dry before painting or the paint will peel. If insects or dust particles are flying in the air they will stick to and spoil the appearance of the surface.

J. U., La Fargeville, N. Y.—My experience has been that it pays well to keep the farm buildings painted, whether paint costs little or much. I have used both the ready-mixed paint and that made from white lead and oil, and it does not matter so much which one uses so long as the quality is good. Pure white lead and pure oil make good paint—and so does a pure mixed paint, and we can be reasonably sure of getting a good grade of either by taking only that made by some reliable maker. The ready-mixed paint is more convenient to use, but at present one may not be able to get just the shades wanted, and so may need to mix two colors together.

Whatever paint is used, be sure that you have enough on hand of the right color before starting, for it may be difficult to get more for finishing, and a little left over can be used elsewhere.

For a red paint for barns I use iron oxide, 7½ pounds, linseed oil, 3 quarts; this makes about a gallon of paint.

In using white lead, break up or soften it in a pail with a little oil to make it into a paste, then add the color if any is to be used. Do not put this all in at once, or you may get too much color. Next put in the drier and stir well. Add the rest of the oil needed and last add the turpentine. It is well to strain paint to remove dirt and lumps; it also spreads better if strained. Never use kerosene or benzine instead of turpentine. On new work all knots and sappy streaks should have a coating of shelllac brushed out thin, before painting. The first coat on new or old work will need more oil than the later ones. Where new lumber has many knots it will be well to use more turpentine and not so much oil. Be sure that the wood is dry before painting, and brush the paint out well. A round brush is better than a flat one, but one can do good work with flat brushes by being more careful about brushing out and not hurrying. In re-painting, the surface may need to be smoothed with sandpaper, or even scraped if the old paint is scaling off.

M. C. M., McKees Rocks, Pa. — In painting farm buildings we have found the best plan is to buy the white lead and oil and mix the paint ourselves. The first time our buildings were painted the ready mixed paint was used, but peeled off, so that in two years it had to be taken off and re-painted. This may not have been due to the ready-mixed paint, but may have been caused by the way it was put on, or the season of painting. The white lead and oil has been much more satisfactory with us. As to color, white looks best, so we think, when buildings are situated among trees. When we painted the last time we wanted dark green for trimming, but as it was during the war the painter said he could not guarantee the color, so used dark gray instead and it is holding its color well.

In many localities the house is painted one color, the barn another. This method detracts from the looks of the farm. Nothing looks better than having buildings kept well painted and all the same color. It has been said that "well painted buildings and a well dressed wife are signs of a prosperous farmer."

Mrs. S. C. F., Kentucky.—Knowing little about mixing, we have never made our own paints, but always depend on the ready-mixed product. For the inexperienced we think it safer and more satisfactory. The selection of colors for the house, barn and outbuildings is largely a matter of taste, and, of course, in that respect some people far excel others. Whatever colors are chosen should harmonize. Nothing which is really intended for the ornamental and beautiful is such an eyesore as a group of farm buildings painted in various colors which fairly scream at each other. Personally, for a frame house, we prefer a white paint with a gray or green finish; a brick dwelling we like painted the natural brick color, and a stone house, too, or one made of concrete we would keep as near the natural color as possible, by the use of proper colored paints. In painting a group of farm buildings we should select the color best suited for the house according to the material of which the house is built; then in painting the rest of the buildings about the farm we should select colors that harmonize with the color of the house and with each other. In painting a smooth, dry surface is absolutely essential if one wishes the work to be satisfactory. And last, but not least, don't spoil a good job with a poor brush. A little thoughtfulness, a little planning, a little more time and a little more care and the job will be better done.

C. C. C. Jr., Virginia.—"Show me a liberal user of paint and I will show you a prosperous farmer," said a druggist to me recently, and I find he is about right. I have just completed painting our house and do not feel I will care to talk paint for a year, so tired am I of the task. I painted all buildings three years ago, and one would naturally suppose I was no exception to the druggist's remark, but I am. Labor is unobtainable and I did the job myself, finding it quite a task, but one that I am proud of and I consider the money spent for paint and oil one of the best, if not the best, investment I could have made. While I have used about everything in the paint line, I am frank to say I prefer white lead and oil to any of the ready prepared paints for the dwelling house, or any smooth surfaced building, the value of which is worth preserving. Wood, like leather, seems to possess a life that oil nourishes and stimulates. There is practically no end to the life of leather if kept well supplied with life-giving oil. I find oil just as essential to the life and preservation of wood. In mixing linseed oil and white lead I use equal parts of each and keep it well stirred. This makes an ideal mixture for the preservation of wood and one can see dry, oil-hungry wood fairly drink the oil. Two or three coats of this mixture produces a beautiful white, the duration of which excels anything else I can purchase. I did the present job of painting with a brush entirely too small for rapid work. My brush was about two and one-half inches wide. Just before completing the job I got a 4-inch brush and found it ideal for outside work. I have never found any way to get around using elbow grease for a good job of painting. Merely sticking paint on the surface is not the idea. It should be well rubbed into every crack and crevice for a good job, and this requires work. Trimming a house is more a matter of taste than anything else. To my taste a white house trimmed with green is ideal. Some colors are more lasting than others, and this fact might be considered in selecting colors. Briefly speaking, paint is not a matter of colors, but a matter of getting it on in time and keeping it on. Paint is high, but not nearly so high as lumber. Above all else, paint. It is better than putting money in the bank.

Homespun Yarn from Ithaca

Many a good recipe has been spoiled because the cook guessed instead of measured.

Fine mending is an art and the high price of fabrics these days makes it a useful as well as a fine art.

Some women drag a heavy mop pail from room to room; others screw castors on the corners of a piece of board about 15 inches square, load the bucket aboard, and roll it easily wherever needed.

One woman says she saves from a half hour to an hour and a half daily by a dish drainer. It's only a wire rack which holds the dishes after they are washed. Boiling water dashed over the dishes does the rinsing and they dry themselves.

The high cost of clothing is sending many a housewife to the attic instead of to the dry goods store.

The hot school lunch saves work for the teacher instead of making work. Pupils study better after a warm lunch than they do after a cold snack.

Perhaps the small amount you receive from the sale of old papers and magazines seems hardly worth the bother of saving them; but every bit of paper stock which is destroyed brings just a little nearer what looks like an inevitable paper famine.

Time for the local health authorities, the school board, the newspaper, the church and all other agencies for betterment to start a concerted and organized campaign against the typhoid fly —formerly known as the house fly.

J4 is a good bulletin on home gardening. The state college of agriculture at Ithaca, N. Y., will mail a copy for the asking.

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The Women's Exchange

This is the farm women's *own* department—for them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

AUGUST 1.—Home makers' number. See announcement elsewhere in this paper of prizes for contributions.

AUGUST 15.—Clothing is so expensive these days that one thinks several times before throwing away the worn garments that in other days would have been considered beyond redemption. How do you use cast-off garments of any and all kinds? The story of your successful "schemes" will help other housewives who hate waste.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Keeping Food With Little or No Ice

Mrs. R. E. C., Vineland, N. J.—When our house was built we had the well bricked down 4 feet below the cellar floor, about 4 feet in diameter. In the kitchen floor a hole was cut about 14x15 inches between joists, right over the well. There is an improvised wooden handle on the door of this. Hinges could have been used, if desired, and strap on opposite edge. Across this hole we have since nailed two strips near enough together so that the baby could not fall through if accidentally left open. Nails are driven right under door on floor joists, and ropes, with enameled buckets suspended from them. Milk bottles, butter, meat, yeasts and all similar sized packages can be put in from the kitchen, and only occasionally do we have to go down the cellar with a larger container. The food comes up ice cold all summer. All our friends marvel at the simplicity and perfect satisfaction of the plan.

Mrs. G. S. D., Denton, Md.—If you cannot have ice, a cool well makes a fairly good substitute. We had this same problem to solve last summer, and decided against an iceless refrigerator in favor of a well, as being less work to care for, and safer from disturbance by prowlers—dogs, cats, etc. In the northwest corner near the house, under the shade of a large maple, the men dug, in rectangular shape, until they struck water, which was not very deep here; then made a box to put down inside the opening, tall enough to leave a curb about 3 feet above the ground. Across the top we place squares of wood stout enough to hold heavy cords, then fasten our closed jars of milk to the strings and allow them to submerge in the water. We also put butter or food in pails, lowering so as to touch the surface, if they are not water-tight. We have only a small amount of milk at a time, so this does very well, but if there is a larger quantity it could be placed in large tin cans, or even a frame to hold the cans could be rigged up to raise and lower with a windlass. To keep leaves and trash from falling in, an old cloth grain bag has a few stones placed in the bottom, the top is tacked on one side of the curb and the weighted bottom hangs over the other.

Mrs. W. H. H., Needmore, Pa.—I have used different kinds of ice boxes and refrigerators and find them very convenient and a great necessity when one does not have a ground floor cellar, cave or spring-house. The life of ice in a refrigerator can be considerably lengthened by wrapping it in paper—newspaper or wrapping paper—but a large piece is necessary, for the object is keeping the air from it. If securely wrapped it will last twice as long as it would without the wrapping, and keep the refrigerator at almost the same temperature.

For more than five years I have been one of the unfortunate—I have neither refrigerator, ice or running water, but have a ground floor cellar, and find I can keep milk, fruit and vegetables equally as fresh, and even for a greater length of time than when ice was used. The important point in keeping milk fresh and sweet is keeping the vessels in which the milk is kept absolutely clean and thoroughly heated each time they are emptied. I can keep milk in my cellar in the hottest weather for at least forty-eight hours before it sours. I keep fruit and vegetables in perfectly fresh condition for several days. The vessels which hold the fruit are set directly on the ground, which gives it just enough moisture to keep it fresh, and ripen that which was not fully so. Lettuce can be kept very nicely by folding a wet paper around it and laying on the ground, or by placing it root end down in a pan with a little water in it; onions, radishes, carrots, etc., can also be kept fresh for several days in this manner, but with such vegetables the tops should be placed in the water.

Mrs. E. H. N., Crewe, Va.—We never had ice, and the last fifteen years no cellar either, but I managed to keep milk sweet and butter cool. Put a box of suitable size, with all the sides taken out, on a shady back porch or some other shady open place, set milk and butter in it, wet a cloth—an old cotton blanket is just the thing, as it holds moisture a long time—and wrap around the box. This acts as a refrigerator and has been very satisfactory to us. The cloth has to be made wet several times a day.

My daughter wraps her ice up in newspapers before she puts it in the refrigerator, and she finds that this saves her two-thirds on her ice bill, from what it used to be before she followed this practice. The object is to keep the air from the ice.

M. A. C., Newtown Square, Pa.—For prolonging the keeping of ice in the ice chest, have a woolen bag large enough to hold the piece of ice, then wrap a paper closely around all; it freezes fast to the bag and lasts just twice as long as it otherwise would. We have found no better way.

We had difficulty in getting ice for the chest last summer, so had to manage without it in keeping our food cool and sweet. As we all know, meats will not keep long even in a cool cellar when the weather is very warm, so as soon as we receive it we cook it until nearly done, put in a covered crock or kettle, when cold, and keep on a cold cellar floor. We also keep butter, milk, etc., in crocks on the cellar floor. We always prepare perishable food in small quantities.

A fireless cooker makes a very good substitute for an ice chest and saves on ice, which is quite an item when it is high in price or unobtainable.

Mrs. O. J., Rio, La.—We have a refrigerator and a home-made ice box. Ten cents' worth of ice will last as long in the box as 40 cents' worth will in the refrigerator. The box is made from a syrup barrel, coated with wood preservative, set inside a big box and the space between packed closely with pounded charcoal for insulation. Sawdust will answer, but charcoal is better. A sheet of asbestos covers the top, the wooden head fits over it, and several newspapers give additional insulation. The wooden lid of box is hinged on, and the drain pipe from an old refrigerator supplies drainage. Cleats are fastened to the sides to support three movable shelves. The ice is kept on the bottom and things needed oftenest on top. As it is built on the plan of the fireless cooker it should not be open a minute longer than is absolutely necessary.

I set yeast, cold victuals and such things as require to be kept only moderately cool, in the refrigerator with a pail of fresh water, which I change several times a day. This keeps the things cooler than one who has not tried it would think.

Mrs. C. S. F., Louisville, Ky.—Last summer it was not convenient for us to keep ice, yet by the aid of a deep well and a cellar under the dwelling I managed to keep the food reasonably cool and fresh. During the very warmest weather foods that spoil quickly, such as milk, butter, fresh meats, etc., I hung in the well. For milk I used bright, new tin buckets; for butter and meats I used glass or stone jars placed in suspended buckets. Foods that were kept in the cellar were sometimes placed in a tub of the coldest water obtainable, or at least on the lowest point possible, the stone floor being the best of all. A wet towel, napkin or cloth spread over the food helped to keep the temperature down. When a block of ice is placed in the refrigerator, if it is first wrapped in a few layers of newspaper and then a woolen cloth, it will not melt so soon. Also if the refrigerator or ice box is placed in a draft or cool place, such as between doors or windows, or a door and a window, the ice will last a little longer. Open the lid of the ice box or the door of the refrigerator as little as possible, as every time it is opened warm air is admitted and this, of course, helps to melt the ice.

Mrs. A. Q., Norwich, N. Y.—I have no refrigerator, but I am fortunate in possessing two things which serve me very well during the hot months. One is a screen covered box which I made myself, and the other a nice, cool vat of water in our milk house. The box is a large one bought in town, but one could easily be made. I took the boards from the front and back, then nailed two cleats on each of the sides about nine inches apart, and fitted in shelves, making two shelves and the bottom to place utensils on. The back I covered with wire screen. The front screen I tacked to small slats that would fit the box and make the door. On this door I fastened three pieces of leather, then nailed them to the box, making my door complete. This box I keep in the cellar on a low bench, and I find that vegetables and left-overs keep very cool and nice in it. When I have a small amount of beefsteak, pork chops or hamburger, I put it in a 2-quart can, seal it so no water can enter, and let it drop in the water vat. Tie a cord to the can to pull it up with when wanted. Meat will keep fresh two days in this way. Butter can be kept hard and nice also, in this way. Use as large a mouthed can as you have and remove with a spoon. Berries, mashed with sugar and sealed tight, will keep fresh and ready for a shortcake at a moment's notice, if placed in the sawdust that is packed around ice in an ice-house.

Mrs. M. F. S., Georgetown, Del.—To keep foodstuffs cool without ice during the hot season is certainly quite a problem. I have had experience both with ice and without it. If one has no cool place in the house I would suggest taking a large stone jar or crock as a receptacle for food. Near the outside door make an excavation in the earth, a little larger than the jar and a trifle deeper, so it can be well covered over, and place the jar therein, having a tightly fitting cover for the jar and a muslin cloth underneath the cover to protect the food from dust. This will keep milk, butter and meats very nicely. Another good way is, if one has a north room, make a frame that will fit the outside of the window, the depth of the frame being wide enough to hold a pan or large plate. Cover this frame on one side with fine wire net. Put in two or more shelves and fasten this firmly to the window frame outside, having the window so it can easily be raised, or hang it with hinges like a door. This is quite convenient for food. At night open the window to let the cool night air in the room, closing it in the early morning to keep out the hot air and to keep the cool air in. I was fortunate to have a good, cool cellar, also.

Mrs. E. B. W., Otisville, N. Y.—We do not use ice except when making ice cream, and find by being careful and taking victuals down to the cellar right after a meal and putting meat on cellar floor and covering with a cheese box it keeps nicely; should not be put away hot however, but allowed to cool before it is covered up. I keep bread in a covered roaster, and cake in a tin box. I often put butter right on the cellar floor also, and do not bring it to the table until wanted.

Milk is in glass bottles and put in a pail of cold water and it keeps well there. Do not let the hot sun shine in the cellar. Have windows open, but when very hot I sometimes darken window or pull it partly shut until toward sundown. By the above plans I think our victuals, milk, etc., are kept in good condition, and no ice bill is to be paid, either.

I. M. H., Center Square, Pa.—Living in the country where we cannot conveniently obtain ice, we endeavor to keep the food several days by other devices. We purchased a stone crock having a capacity of one gallon. The various kinds of fresh meat are each put on a separate plate and placed on one another in this crock, then covered. When the weather is extremely warm or sultry and we wish to keep the meat a greater length of time, it is placed in a stone crock containing sufficient brine to cover it, then wash it well before using. Cooked food may be kept at quite a low temperature by placing it in an aluminum kettle with a lid, which has been thoroughly cooled, then placed on the cool cellar floor. The well-known home-made iceless refrigerator is very satisfactory.

Mrs. M. M. C., McKees Rocks, Pa.—As we live three miles from the ice plant, and have no opportunity of getting ice regularly, we have to plan to keep food without it. We have no spring-house, but have a deep cellar with a cement floor. Several years ago we made an oblong box about 3 feet long by 2 feet wide, without any bottom in it. For the top of the box we covered it with common screen wire. Any food we wish to keep cool is set on the cement floor and covered with the screen-covered box. This permits a circulation of air, yet keeps it very cold. The cellar, of course, must be kept clean. A swinging shelf in the cellar is also a great convenience for keeping cake, pies, jams, jellies, etc., that are to be used on the table. The milk and cream are kept in crocks, pans, etc., on the cement floor and will keep as cool as in a spring-house. In cool nights a window is opened for fresh air, but the window is well screened.

Home-made fried cakes taste good, but the odor left in the house after frying them is not so appetizing. Ever try a few drops of oil of lavender on a cloth and waved about the room?

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9688.—Ladies' waist. Cut in sizes 36, 38, 40 and 42 inch bust measure. The side-fronts are tied together with narrow satin ribbon over a vest of white.

9684.—Ladies' one-piece apron. Cut in sizes 36, 40 and 44 inches bust measure. A becoming roll collar graces this one-piece bungalow apron of percale.

8931.—Ladies' waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. Collarless and daintily tucked at the front and back is this simple batiste waist.

8677.—Boys' suit. Cut in sizes 4, 6, 8 and 10 years. The straight coat closing at the side wears a large patch pocket on each hip.

8960.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. To correspond with the front waist-closing, the skirt, which is three-gored, is seamed under a tuck at the front.

9534.—Girls' and juniors' apron. Cut in sizes 8, 10, 12, 14 and 16 years. As easy to make as it is to adjust is this cover-all apron of checked gingham.

9687.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. The simplicity of this tub skirt will appeal to the home dressmaker. It is two-pieced and gathered at the top.

9667.—Girls' dress. Cut in sizes 6, 8, 10, 12 and 14 years. Belted to give a long waist line is this style of slip-on frock.

9548.—Men's overalls. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. The bib-front and shoulder strap feature makes this the type of overalls preferred by most men.

Our Latest Fashion Book

Owing to the number of departments in THE PRACTICAL FARMER, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents, postpaid. Address
FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

SUNNY SLOPES

By Ethel Hueston

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The Bobbs-Merrill Company

Author of Prudence of the Parsonage, etc.

CHAPTER XXII
HARBORAGE

Less than a mile down the track, Prince came to the tiny signal house for which he had been looking. The door was locked, and so numb and clumsy were his fingers that he found it hard to force open. Once on the inside, he felt that the struggle was nearly over. This was the end. Using the railway's private phone, he astonished the telegraph operator in Fort Morgan by cutting in on him and asking him to run across to the nearest garage with a call for a service car.

For a long moment the operator was speechless. Did you ever hear of insolence like that? He told Prince to get off that wire and keep his hands away from railway property or he would land in the pen. Then he went back to his work. But Prince cut in on him again. Finally the operator referred him to the station master and gave him the connection. But the station master refused to meddle with any such irregular business. This was against the law, and station masters are strong for law and order. But Prince was persistent. At last, in despair, they connected him with the district superintendent.

"Who in thunder are you, and what do you want?" asked the superintendent in no gentle voice.

"I want some of those sap-heads of yours in Fort Morgan to take a message to the garage, and they won't do it," yelled Prince.

"Say, what do you think this is? A philanthropic messenger service?" ejaculated the superintendent.

"I haven't got time to talk," cried Prince. "I've got to get at a garage, and quickly."

"Well, we don't run a garage."

"Shut up a minute and listen, will you? There is a woman out here on the track, half frozen. We are twenty miles from a house. Will you send that message or not? The woman can't live two hours."

"Well, why didn't you tell what was the matter? I will connect you with the operator at Fort Morgan and tell him to do whatever you say. You stay on the wire until he reports they have a car started."

So Prince was flung back to the operator at Fort Morgan, and that high-souled scion of the railway was sent out like a common delivery boy to take a message. Prince waited in an agony of suspense for the report from the garage. It was not favorable. No man in town would go out on a wild goose chase into the plains on a night like that. Awfully sorry, nothing doing.

"Take a gun and make them come," said Prince, between set teeth.

"I'm not looking for trouble. Your woman would freeze before they got there anyhow."

"Send the sheriff," begged Prince.

"He couldn't get out there a night like this in time to do you any good."

This was literally true. For a second Prince was silent.

"Anything else?" asked the operator.

"Want me to run out and get you a cigar, or a bottle of perfume, or anything?"

"Then there is just one thing to do," said Prince abruptly. "I'll have to flag the first train and get her aboard."

"What! You can't do it. You don't dare do it. It is against the law to flag a train on private business."

"I know it. So I am asking you to make it the railroad's business. I am warning you in advance. Where are the fuses?"

The operator helplessly called up the superintendent once more.

"What the dickens do you want now?"

"It's that nut on the line," explained the operator. "He wants something else."

"Yes, I want to know where the fuses are so I can flag the first train that comes. Or I will just set the tool house afire; that will stop them."

"The fuses are in the lock box under the phone. Break the lock or pick it. Let us know if you get in all right. How the dickens did you get a woman out there a night like this?"

But Prince had no time to explain. "Thanks, old man, you're pretty white," he said, and clasped the receiver on to the hook. A little later, with the precious fuses in his pocket; he was fighting his way through the snow back to Connie, lying unconscious in the white blankets which no longer chilled her.

The waiting seemed endlessly weary. Prince dared not sit down, but must needs keep staggering up and down the track, praying as he had never prayed in all his life, that God would send a train before Connie should freeze to death. Stooping over her, he chafed her hands and ankles, shaking her roughly, but never succeeding in restoring her to consciousness though doubtless he did much toward keeping the blood in feeble circulation.

Then, thank God! No heavenly star ever shone half so gloriously bright as that wide sweep of light that circled around the ragged rocks. Prince hastily fired the fuse, and a few minutes later a lumbering freight train pulled up beside him, anxious voices calling inquiry.

With rough but willing hands they pulled the girl on board, and piled heavy coats on a bench beside the fire where she might lie, and brought out some hot coffee which Prince swallowed in deep gulps. They even forced a few drops of it down Connie's throat. Prince was soon himself again, and sat silently beside Connie as she slept the heavy sleep.

A long lumbering ride it was, the cars creaking and rocking, reeling from side to side as if they too were drunk with weariness and cold.

At last Connie moved a little and lifted her lashes. She lay very still a while, looking with puzzled eyes at her strange surroundings, enjoying the huge fire, wondering at that curious rocking. Then, glancing at the big brown head beside her, where Prince sat on an overturned bucket with her hand in his, she closed her eyes again, still puzzled, but content.

Long minutes afterwards she spoke.

"Are you cold, Prince?"

He tightened his clasp on her hand.

"No."

"How did you ever make it?"

"The train came along and we got on. Now we are thawing out," he explained, smiling reassurance.

"I do not remember it. I only remember that I was stuck in the snow, and that you did not leave me."

"Here comes some more coffee, lady," said the brakeman, coming up. Connie drank it gratefully and sat up.

"Where are we going?"

"To Fort Morgan."

"Want any more blankets or anything?" asked the brakeman kindly. "Are you getting warm?"

"Too warm, I will have to move a little."

Prince helped her gently farther from the roaring flames, and again pulled his bucket close to her side. He placed his hand in her lap and Connie wriggled her fingers into his.

Suddenly she leaned forward and looked into his face, noting the steady steely eyes, the square strong chin, the boyish mouth. Not a handsome face, like Jerry's, not fine and pure, like

(Continued on page 216)

First Ventures in Sheep

EDGAR L. VINCENT.

The first lamb we had on the farm was one that grandfather gave our oldest boy. That was the old man's practice. As soon as the boys got old enough to take care of a lamb, he selected a good one from his flock and gave it to the little chap. That was a sacred affair, and the fathers of the boys would no more think of selling those lambs and using the money than they would of robbing their boys any other way.

A sad mishap came to our "Laddie" soon after the lamb came to the age of bearing. The lamb borne by the first sheep reached under the fence one day after a bite of fresh grass. A heavy panel of boards dropped off the hook and choked the lamb to death. Laddie dug a grave, put the dead lamb in and buried it all himself, putting up a flat stone at the head of the grave with the inscription on it, "Nan's Lamb." That was a great sorrow.

We learned something from that experience, and one thing was, to fasten the fence panels on so that they could not be lifted off the hooks in any such way. I put some hooks above the second panel of the fence, with the hook turned downward, so that it would firmly hold the boards down. That put an end to that difficulty.

Our next experience was in buying a sheep. I went to a stranger a mile or so away and bought a small sheep. I thought it not fully grown. It proved to be about as large as it ever would be, and I never was more disappointed than when I found the sheep to be a partly wild animal that bore wool that was more hair than wool. The buyer of wool always "docked" that sheep's fleeces. I do not blame him. I did not raise any lambs from that sheep. The only one she had was of the same hairy type and we sold it and the old sheep and began over again. So far not much advance.

If I had to do it over again I would do now just what I did when we made our first really worth-while venture in sheep. I drove away a number of miles to the farm of a man who had good sheep and bought some ewe lambs, and then to another farm to get a ram. That gave me two breeds of different blood and from those we started in. A number of times I did that, especially when I needed a ram. Instead of saving one from my own flock to breed from, I went to some breeder who had a different blood from that of my sheep. That was good policy. It is the best thing any man can do, as I look at it. I do not like to breed sheep in too closely. The progeny do not seem to me to have the virility that those do which come of crossing two life streams.

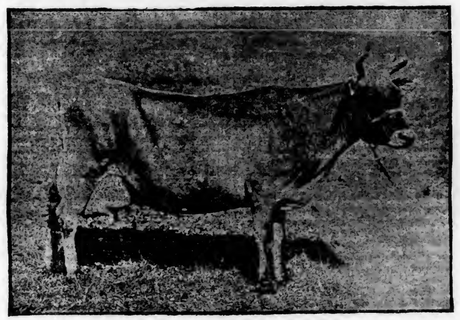
With the better lambs we found ourselves bestowing more and more care on them. As a rule, I believe that to be true. The more we have to pay for a thing, the more we are likely to prize it. The man who is careless about feeding and otherwise caring for sheep of the ordinary type will do well to put into his operations the spur of some really choice sheep.

The boys, too, had the same spirit. "The lambs cost father a whole lot of money. Now we must be awfully careful of them." That expresses the opinion of the little chaps better than any language of mine could do it. If you want to put fire into the heart of your boys, give them something that is fine to bestow their attentions upon.

The results proved the wisdom of getting better blood into the flock. We not only had more lambs but they were far better lambs. The pure-breds grew faster on the same outlay of feed. They sold for better prices. We know now that one of the most serious mistakes any man can make in sheep is to invest in scrub stock. Good or none is the best policy for the prospective sheep man. *New York.*

A Cow that Improved with Age

Good tunes are often played on old fiddles, and the story of a 20-year-old Jersey cow that has had nineteen registered calves in her lifetime, with Register of Merit records in her nineteenth and twentieth years, will sound like good music to the agricultural educators who get themselves blue in the face by trying to talk backward farmers into doing official test work.



Financial King's Interest: 19 calves in 20 years and a record of 400 pounds fat after her 20th birthday

Being brought face to face with a great record has convinced more dairymen and breeders than thousands of Chatauquas about the uplift of dairying. If seeing, therefore, is believing, there is bound to be a new multitude of converts to the idea of official test work in some form or other after this story of Financial King's Interest is unfolded.

Financial King's Interest was born in 1900, just a short while after the Spanish War, which is mentioned merely as a milestone in memory. Since that time this cow has been modestly doing the work that all good cows are supposed to do. She faithfully delivered a profitable mess of milk every year and also presented her owners with slightly more than one calf a year. When her owners realized that they had a cow that was quite ahead of the ordinary they became interested in what she might do on official test, so at eighteen years of age they started her for the Register of Merit and she produced 7,433 pounds of milk, 401 pounds of fat, and her usual calf.

At about this time she was greatly sought after because of the popularity of Financial King blood, and Mr. J. V. Cotta, of Crawfordsville, Indiana, managed to buy her from Whitford Bros., of Kendallville, Indiana, who had bought her from A. P. Walker, the man who brought her from the Island of Jersey.

Mr. Cotta had an idea that the cow could be bred to Financial Sensation, her grandson, in a line-breeding operation, and he has recently been rewarded in his efforts by securing a very fine heifer calf. Three weeks after calving she was bred again to the same bull, and is apparently safe in calf and ready for her third official record.

Her second record, which has just ended, totaled 7,302 pounds milk and 400 pounds fat.

Financial King's Interest's genealogical history is as follows: Born Jan. 19, 1900. Breeder, G. F. Fauvel, St. Martin's, Island of Jersey. Calved as follows: August 14, 1902; April, 1903; April 5, 1904; March 1, 1905; February 1, 1906; January 10, 1907; December 5, 1907; December 14, 1908; December 30, 1909; April 7, 1911; March 1, 1912; September 20, 1913; July 27, 1914; June 12, 1915; April 30, 1916; February 26, 1917; February 20, 1918; March 22, 1919; February 24, 1920.

Financial King's Interest is a daughter of Financial King, which also was the sire of Financial Countess, at one time the highest producing cow of the Jersey breed. The intensification of these blood lines by the present breeding operations with Financial King's Interest should produce a family of animals that will be strong in production, reproduction and longevity.

This work will be watched with much interest by followers of breeding operations, and the mere fact that this cow has done such great work at an advanced age should prove an inspiration to many breeders to give their cows a chance to make good by the official test route.

No cow is too old to be put on test, and no man is too old to begin Register of Merit work. Everything depends on the point of view.

The latest record was made at Greystone Farms, West Chester, Pa., the home of Financial Sensation, where Financial King's Interest will be kept for breeding purposes by Mr. J. V. Cotta.

A Good Word for Silage

WESLEY RAY.

We have had many years' experience in feeding and caring for stock. Until the silo came our plan was to get as much of the corn fodder into the barn as possible, being strictly grain farmers then we did not have the hay to depend upon only for the work teams. We consider bright corn fodder yet to be one of the very best feeds for young cattle, and also for the milch cows, through the winter. We depend now mostly upon corn silage, as it is handy to feed and in our judgment is the most economical way of feeding corn and fodder. We put up our silage when the corn is just beginning to shrink. It seems as though our stock like it better when put up at this stage. We have a very comfortable barn for our cows, though they are only housed during the night, except in stormy weather they are kept in the barn.

During the winter season our cattle run on blue grass pasture, which is a fine thing to tone them up. Our young cattle get a liberal feed twice daily of corn silage, with plenty of salt to lick and with the pasturage they do fine. Of course, we give the milch cows a mixed feed besides the silage. We feed them night and morning two gallons each of seven parts wheat bran, two parts crushed rye and ten parts linseed meal. We know of no better combination feed to produce milk and butter. If there are any better, we would like to learn of it. *W. Va.*

Restrain the dog and save the sheep.

You can't work effectively and fight flies at the same time; neither can the cows. Spraying will help.

Good wool on the sheep will not be good wool in the market unless it is properly handled. There's more to marketing wool than merely shearing it and stuffing it in a bag.

Wood silos need attention right now. As the staves dry out the hoops may become loose, and the whole structure become shaky. Tightening the hoops now may prevent the silo from being broken down before the filling season comes on.

The Bureau of Foods, Pennsylvania Department of Agriculture has issued 5,468 oleomargarine licenses since the first of the present year. This is only 320 less than were issued during the entire year of 1919. Of the number issued so far this year, 125 have been taken out by boarding house keepers and six by restaurants.

A. W. Hopkins, of the Wisconsin College of Agriculture, believes that a neat, well-worded letterhead is good kind of advertising for the progressive farmer. "The name of the farm," he says, "is the big feature of the well-planned letterhead, the product second, and the farmer's name third in importance. A short, snappy, easily remembered slogan often adds to the force of this letter advertisement."

A wonderful beast is the pig,
No more for his feed should he dig,
If he gets the good grain,
And sleeps out of the rain,
The profit to his owner is big.

Give the Hogs a Fish Course

The common domestic pig will never be able to write a book on table manners, but he knows how to order a meal as well as anyone. He is in a fair way to demand a fish course to supplement his salad and vegetable diet. He will take his fish in the form of fish meal, the refined by-product made from sound, wholesome raw material at the sardine, tuna and salmon canneries, or from the menhaden.

The fish meal is not to be confused with "fish scrap," a coarser by-product much used for fertilizer; the meal is made from clean, sound material and is intended to be used as a food for cattle and hogs. Formerly, the cannery waste was all made into "scrap" for fertilizer purposes, but the Bureau of Chemistry, United States Department of Agriculture, knowing the extremely high protein content of the scrap, has been active in converting this material into a high-grade protein feed. The cleaned, selected portion is ground to a fine, palatable meal which may be used to replace tankage in hog, poultry, or dairy rations.

Fish meal has been recommended as a supplementary ration before now, but popular prejudice against a badly prepared product has discouraged its use. The Department of Agriculture has proved by feeding experiments that fish meal equals the high-priced tankage as a ration ingredient, and better methods of selecting and milling have removed the causes of prejudice.

The oil content of the meal adds materially to its feeding value. So far the experiments have shown that the meal does not taint the animal product, whether it be pork, butter, eggs or milk. Moreover, by diverting the fish meals to his animals instead of supplying it directly to his land as fertilizer, the farmer loses but a trifle of its fertilizing value and gains its entire feeding value—thus making the material yield two profits in the place of one.

Let Your Bull Indorse Your Note

The Better-Sires campaign conducted by various states in co-operation with the Bureau of Animal Industry, United States Department of Agriculture, is developing the fact that bank credit is as available to the progressive live stock farmer as to the progressive business man of the city.

A letter received by the Bureau of Animal Industry reports the following announcement published by a Wisconsin bank to its farmer patrons:

"Why not keep some of those pure-bred Holsteins home? Many fine animals will be sold at the first annual sale of the Brown County Holstein Breeders' Association to be held in the Brown County Fair Grounds, West De Pere, Wis., on Monday, May 10th. The —— Bank is ready to stand back of any of its customers who wish to purchase some of the stock to be offered for sale and who do not feel able at present to carry the investment. Call at the bank, and the accommodation can be easily arranged."

Hog cholera is the swine raisers' chief enemy. Inoculation locks the stable before the horse is stolen.

A little paint goes a long way toward sprucing up about the farm.

Jerseys Sell for $463,529

"Jersey Week of 1920," with the Annual Meeting of the American Jersey Cattle Club and its numerous sales, will certainly go down in Jersey history as one of the breed's most notable occasions. Almost half a million dollars worth of Jerseys were sold during the week at five great sales held in New York and neighboring states; 354 animals were sold for a total sum of $463,529, averaging $1309 per animal, both bulls and cows of all ages.

At the sale held by Edmond Butler at Mt. Kisco, N. Y., a new high price was established for Jersey cows when F. W. Ayer of Philadelphia, Pa., purchased the 3-year-old cow Fern's Oxford Triumph for $15,000. Sixty animals were sold at this sale for a total of $186,250, an average of $3,104, the second highest average ever received at a Jersey sale. The top price of the sale was paid by C. F. Sturhahn, Hartford, Conn., who paid $23,000 for Gipsy Gamboge Lad, a 3-year-old grandson of Oxford Majesty's Gipsy, grand champion of the 1917 and 1918 National Dairy Shows.

The sale of W. R. Spann's importation took place at Morristown, N. J., the day following the Butler sale. Seventy-nine animals were sold for a total of $106,495, or an average of $1,348. The top price sale was Bright Golden Poppy, sold to Longview Farms, Lee's Summit, Mo., for $6,600.

T. S. Cooper & Sons, of Coopersburg, Pa., sold 84 head of Jerseys for $77,579, averaging $923 per animal. The top-price animal at this sale was Rower's Fawn Beauty, sold to Ayer & McKinney, Philadelphia, Pa., for $5,700.

At the Hood Farm sale, Lowell, Mass., 71 Jerseys were sold for $53,535, averaging $755. Sophie's Elberta, which made 668 pounds fat as a 3-year-old and has also made a fine record in the show ring, was top-price animal, selling for $6,300 to W. L. Glatfelter, of Spring Grove, Pa.

The combined Kaplan-Inderkill sale held at Staatsburg, N. Y., and at which sixty head were sold, brought a total of $39,670, averaging $661.

Late Blight of Celery

Late blight is the worst celery disease since it stunts the plants badly when they are growing and causes them to rot readily in storage.

The fungus which causes the blight is carried over the winter in old dead leaves and stalks, in manure to which celery refuse has been added, and in the soil itself. Control measures should therefore include a rotation of crops, cleanliness in burning up the diseased leaves and stalks in fall and using manure free from refuse of this kind.

In addition to these sanitary measures it may be necessary to spray the growing plants. For this purpose Bordeaux mixture 4-4-50 is the best spray to use. It should be applied as soon as the first spots show in the leaves; if left off until the spots become numerous, control is difficult. The countless spores produced by the fungus in these spots are spattered by rain and spread by other agencies to nearby leaves where they start fresh spots, and since these new spots soon have a crop of spores in their turn, there is a constant increase in the disease all summer. Spraying stops this increase by killing the spores before they can start new spots. It may be necessary to spray once in the seed-bed and three or four times afterward in the field, but if the plants are watched carefully so that the few earliest spots are observed when they first appear, and if spraying is then done promptly and thoroughly the number of sprayings necessary during the season may be lessened.

Bill Nye's Cow

Bill Nye, the humorist, once had a cow he wanted to sell and he unblushingly advertised all her faults while naming the few virtues she seems to have possessed. His advertisement ran:

"Owing to my ill health, I will sell at my residence in township 19, range 18, according to the government's survey, one plush raspberry cow, age 8 years. She is of undoubted courage and gives milk frequently. To the man who does not fear death in any form, she would be a great boon. She is very much attached to her present home with a stay chain, but she will be sold to anyone who will agree to treat her right. She is one-fourth Shorthorn and three-quarters hyena. I will also throw in a double barrel shotgun which goes with her. In May she usually goes away for a week or two and returns with a tall red calf with wobbly legs. Her name is Rose. I would rather sell her to a non-resident, the farther away the better."

Order Fall Fertilizers Now

So valuable has acid phosphate been found in growing wheat that officials of several state experiment stations call attention to the fact that farmers will profit by ordering their fall fertilizers at once. Transportation difficulties may become more acute during the summer, and since the manufacture and transportation of acid phosphate is of a seasonal nature, the orders should be placed early.

It may be necessary to use considerable fertilizer next fall to combat the Hessian fly, which has been quite destructive during this season. In some cases it is necessary to plant the wheat late and fertilize heavily, depending on the fertilizer to give the wheat a start equal to that of early sowing.

At the Ohio Experiment Station and on many of the county experiment farms of that state, the use of 100 pounds of acid phosphate to the acre has increased the wheat yield by 5 bushels per acre, while the residual effect of the fertilizer is also noted for several years, the increase in the hay crop following the wheat paying the entire cost of the fertilizer application in many experiments.

French Hives Bulge with Red Cross Sugar

Honey prospects in France look bright this season and it's all on account of a fire in an American Red Cross warehouse at Marseilles. A special cablegram (copyrighted) to the New York World tells why dealers in the product of the busy little bee already are gloating over the fat bank rolls that will be theirs.

The fire reduced to sticky caramel-like consistency the great quantities of sugar stored in the warehouse for distribution in the relief work abroad. Before workmen assigned to the task of clearing away the debris could fairly don their overalls, countless thousands of industrious insects descended upon the ruins. It would seem that all the bees in France were present at the feed and that all the hives from the English Channel to the Mediterranean would shortly be bulging with honey. Workmen who bravely essayed to rout the small vandals were obliged to retire in confusion.

Great fires were built around the charred building in an effort to smoke the bees out, but at last accounts this was only partly successful.

A few raisins in the rhubarb sauce not only add flavor, but help out in the sweetening.

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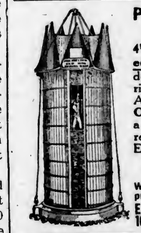

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Sunny Slopes

(Continued from page 213)

David's,—but strong and kind, a face that somehow spoke wistfully of deep needs and secret longings. Suddenly Connie felt that she was very happy, and in the same instant discovered that her eyes were wet. She smiled.

"Connie," whispered the big brown man, "are we going to get married, sometime?"

"Yes," she whispered promptly, "sometime. If you want me."

His hands closed convulsively over hers.

"Make it soon," he begged. "It is terribly lonesome."

"Two years," she suggested, wrinkling her brows. "But if it is too lonesome, we will make it one."

"You won't go away." Prince was aghast at the thought.

"I have to," she told him, caressing his hand with her fingers. "You know I believe I have a talent, and it says in the Bible if you do not use what is given you, all other nice things you have may be taken away. So if I don't use that talent, I may lose it and you into the bargain."

Prince did not understand that, but it sounded reasonable. Whatever Connie said, of course. She has a talent, all right, a dozen,—a hundred of them. He thought she had a monopoly on talents.

"I will go back a while and study and work and get ready to use the talent. I have to finish getting ready first. Then I will come and live with you and you can help me use it. You won't mind, will you?"

"I want you to use it," he said. "I'm proud of it. I will take you wherever you wish to go, I will do whatever you want. I'll get a home in Denver, and just manage the business from the outside. I can live the way you like to live and do the things you like to have done; Connie, I know I can."

Connie reached slowly for her handbag. From it she took a tiny notebook, and tossed it in the fire.

"Literary material," she explained, smiling at him. "I can not write what I have learned in Fort Morgan. I can only live it."

CHAPTER XXIII

THE SUNNY SLOPE

After Connie's visit, when she had returned to Chicago to finish learning how to write her knowledge, David and Carol with little Julia settled down in the cottage among the pines, and the winter came and the mountains were huge white monuments over the last summer that had died. Later in the winter a nurse came in to take charge of the little family, and although Carol was afraid of her, she obeyed with childish confidence whenever the nurse gave directions.

"I feel fine to-day," David said to her one morning. "I think when spring comes I shall be stronger again. It is a good thing to be alive."

He glanced through the window and looked at Carol, buttoning Julia's gaiters for the fifth time that morning.

"It is a pretty nice world to most of us," said the nurse.

"We each have a world of our own, I guess. Mine is Carol and Julia now. I have no grouch at life, and I register no complaint against circumstances, but I should be glad to live in my little world a long, long time."

One morning when spring had come, when the white monuments melted and drifted away with the clouds, and when the shadowy canyons and the yellow rocky peaks stood out bare and bright, David called her to him.

"Look," he said, "the same old sunny slope. We have been climbing it four years now, a long climb, sometimes pretty rough and rugged for you."

"It was not, David,—never," she protested quickly. "It was always a clear bright path. And we've been finding things to laugh at all the way."

He pulled her into his arms beside him on the bed. "We are going to the top of the sunny slope together. Look at the mountain there. We are going up one of those sunny ridges, and sometime, after a while, we will stand at the top, right on the summit, with the sky above and the valleys below."

She nodded her head, smiling at him bravely.

"I think it is probably very near to Heaven," he said slowly, in a dreamy voice. "I think it must be. It is so intensely bright,—see how it cuts into the blue. Yes, it must be right at the gates of Heaven. We will stand right there together, won't we?"

"David," she whispered.

"This is what I want to say. After that, there will be another way for you to go, on the other side. Look at the mountains, dear. See, there are other peaks beyond, with alternating slopes of sunshine and canyons of shadow. It is much easier to stick to the sunny slopes when there are two together. It is very easy to stagger off into the shadows, when one has to travel alone. But, Carol, don't you go into the shadows. I want to think always that you are staying in the sunshine, on the slopes, where it is bright, where Julia can laugh and play, where you can sing and listen to the birds. Stick to the sunny slopes, dear, even when you are climbing alone."

Carol nodded her head in affirmation, though her face was hidden.

"I will, David. I will run right out of the shadows and find the sunny slopes."

"And do not try to live by 'what would David like?' Be happy, dear. Follow the sunshine. I think it guides us truly, for a pure kind heart can not mistake fleeting gaiety for lasting joys like you and I have had. So wherever your journey of joy may take you, follow it and be assured that I am smiling at you in the sunshine."

Carol stayed with him after that, sitting very quietly, speaking softly, in the subdued way that had developed from her youthful buoyance, always quick to smile reassuringly and adoringly when he looked at her, always ready to look hopefully to the sunny slopes when his finger pointed.

CHAPTER XXIV

THE END

In a low hammock beneath the maples Carol lay, pale and slender, dressed in a soft gown of creamy white, with a pink rose at her belt. Through an open window she could see her father at his desk up-stairs. Often he came to the window, waving a friendly greeting that told how glad he was to have her in the family home again. And she could see Aunt Grace in the kitchen, energetically whipping cream for the apple pie for dinner—"Carol always did love apple pie with whipped cream." Julia was digging a canal through the flower bed a dozen steps away. And close at her side sat Lark, the sweet, old, precious twin, who could not attend to the farm a single minute now that Carol was at home once more.

Carol's hands were clasped under her head, and she was staring up through the trees at the clear blue sky, flecked like a sea with bits of foam.

"Mother," cried Julia, running to the hammock and sweeping wildly at the sky with a knife she was using for a spade, "I looked right up into Heaven and I saw my daddy, and he did not cough a bit. He smiled at me and said, 'Hello, little sweetheart. Take good care of Mother.'"

Carol kissed her, softly, regardless of the streaks of earth upon her chubby face.

"Mother," puzzled Julia, "what is it to be died? I can't think it. And I lie down and I can't do it. What is it to be died?"

"Death, Julia, you mean death. I think, dear, it is life,—life that is all made straight; life where one can work and never be laid aside for illness; life where one can love, and fear no separation; life where one can do the big things he yearned to do, and be the big man he yearned to be with no hindrance of little petty things. I think that death is life, the happy life."

Julia, satisfied, returned to her canal, and Lark, with throbbing pity, patted Carol's arm.

"Do you know, Larkie, I think that death is life on the top of a sunny slope, clear up on the peak where it touches the sky. Such a big sunny slope that the canyons of shadow are miles and miles away, out of sight entirely. I believe that David is living right along on the top of a sunny slope."

Her father stepped to the window and tapped on the pane, waving down to them. "I can't keep away from this window," he called. "Whenever you twins get together I think I have to watch you just as I used to when you were mobbing the parsonage."

The twins laughed, and when he went back to his desk they turned to each other with eyes that plainly said, "Isn't he the grandest father that ever lived?"

Then Carol folded her hands behind her head again and looked dreamily up through the leafy maples, seeing the broad mesa stretching off miles away to the mountains, where the dark canyons underlined the sunny slopes.

THE END

The Camera and Bookkeeping as Farm Helps

J. D.

My camera is the traveling drummer which aids me markedly in disposing of my surplus stocks of hogs, pigs, cattle, calves and horses. Whenever I have any stock to sell, I take several good pictures of the animals, and lay in a liberal supply of unmounted prints. Then I advertise the stock in the most reputable farm papers of my section, and to all interested inquirers who write for particulars about the animals I send pictures, with complete and accurate descriptions and the prices. In this way I have sold over $1000 worth of calves and pigs, and I have yet to receive any complaints that the animals were not as good as represented; in fact, most of my mail order buyers have come back for more. I highly recommend the camera as an efficient selling agent. It does not involve photographic skill to get a representative live stock picture such as I use in this work; complete directions come with each standard make of camera, which, if followed closely, will result in the production of good pictures.

I have found that broadside views of the animal are best. The calf can be snapped while grazing, or the pig can be kept quiet for a few minutes by scattering corn on the ground or placing slop in the trough. Where desired, a tail-on view of the hindquarters may also be made, to show the girth, width of barrel and general capacity of the animal. I always make glossy-finish prints and send them to inquirers, because generally they show up better and picture the animal to much better advantage from a salesmanship point of view than do dull-finish pictures.

Not only can the camera be used effectively as a salesman of live stock and poultry, but it also can be used efficiently in disposing of farming property, including farm buildings, silos and equipment. Pictures should be taken when the farm and buildings look their best, and should be used judiciously in interesting prospective buyers in the place and as a lead-up which will cause the parties to visit the place in person.

My farm bookkeeping system is simple, as it really consists only of a day-book statement of daily receipts or expenditures, which I concentrate into a sort of handy ledger form at the time—January 1st each year—when I take my annual inventory. My farm book accounts system has helped me locate the leaks and assisted me in plugging them up in many cases. It paid me to keep account of the production, expenses and net income from each of my cows, while similar labor devoted to the farm flock proved time well spent, and those were arguments enough to swing me to the standard of farm bookkeeping, so that now I keep track of my field crop debits and credits, as well as all other agricultural accounts on the farm.

Virginia.

Ways of Setting Colors

Wash dresses for the summer are being made in such a variety of delicate colors that the problem of setting the colors when the garments are to be laundered many women feel has become a perplexing one. In laundering colored fabrics, it is well to abide by a few general rules, as failure to do so has ruined many a dainty garment. Extremely hot water and hot irons should not be used in washing and ironing colored fabrics. Strong soaps likewise may either dull the color or cause it to run. Each colored garment must, of course, be washed by itself.

Although the use of salt is probably the simplest method of setting colors, because it is cheap and always at hand, other substances have been found to give more lasting results for specific colors.

The following inexpensive substances for setting different colors in cotton or linen have been used successfully:

To set blue, use one-half cup mild vinegar to a gallon of water. For pink or red, use from one tablespoon to one-half cup of vinegar to one gallon of water. To set lavender, use one tablespoon of sugar of lead to each gallon of water. For green, use one-half to one ounce of alum according to the depth of the tint, or the same proportion of sugar of lead. For black, deep blue, or very dark colors, dissolve from one to two tablespoons of ox gall in each quart of water, soak the garment in this solution, dry, and then wash.

If salt is to be used, the material should be placed in a solution made from a handful of salt and a gallon of water, and allowed to remain for some time.

Settlement of 127,151 insurance claims, for death and total permanent disability, and representing a total value of $1,135,552,173.45, has been announced by Director R. G. Cholmeley-Jones of the Bureau of War Risk Insurance. Only 5,119 claims are pending, and in these cases the claimants are beneficiaries in many instances residing in foreign countries where disturbed conditions render communication impossible.

The Pennsylvania Department of Agriculture reports that during the 1918 season 1,220,000 sugar maple trees were tapped, which produced approximately 993,000 pounds of sugar and 440,000 gallons of syrup. The average yield per tree was 3.7 pounds of sugar, and the average yield of syrup was .46 gallon per tree.

The farmers of Pennsylvania use 5 per cent. of the total amount of fertilizers applied to the soil in the United States each year, according to a statement prepared by the bureau of chemistry, Pennsylvania Department of Agriculture.

Beekeeping is profitable. Why neglect this source of income?

The Practical Farmer

PUBLISHED CONTINUOUSLY SINCE 1855

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LIBRARY SCHOOL OF AGRICULTURE AND EXPERIMENT STATION PENNSYLVANIA STATE COLLEGE STATE COLLEGE, PA.

How I Won a Gold Medal—a Clean Milk Story

By M. A. MAHONEY

LAST February the Virginia Dairymen's Association announced to the dairymen throughout the state that they would hold a milk contest in Richmond when the dairymen met there, from February 17th to 19th inclusive. Naturally I entered this contest, as I have always encouraged everything similar to this to increase the dairy interest in our state. After signing the agreement early in that month, one-half of our farm help fell victims to the influenza epidemic, consequently I forgot all about the exact date of the milk contest. I mention these facts to let others know no extra care was taken with the milk, and the barn received only ordinary attention; when the county agent opened the cans at the depot and took samples of the milk, I was quite surprised, as I thought he would visit our dairy during the morning or evening milking hours and procure the necessary samples there. After this the scarcity of farm help and the disagreeable weather caused me to forget all about the contest until I saw the announcement in the county paper. After this I was officially informed that I had won the first prize, a gold medal. Naturally, a great many farmers were under the impression that our dairy farm must be equipped with a large modern dairy barn and the dairy house must be a model of perfection, for us to receive a score card for milk of 98.6 per cent. This led a number of people to visit our place, and we were compelled to answer a large number of questions.

Mr. Mahoney's gold medal, some of the cattle that helped him win it, and a glimpse in the clean, but simply equipped, barn that made its winning possible

Our barn is not an expensive one—it was built for thirty cows some nine years ago; it faces east and west; it has a continuous line of windows on either side; the floor is of cement and we have the steel stanchions; two hydrants at each end of the barn are used to water the cows in inclement weather, and then a hose pipe is turned on to wash every particle of dirt out of the barn every day. The old saying, "Cleanliness is next to Godliness," is an excellent one, and the dairy barn is one place where everything should be kept scrupulously clean; in fact, few people realize how important it is to produce clean milk.

When I first decided to enter the dairy business I visited a number of large dairy farms to glean all the practical ideas possible, but much to my surprise I was not impressed with the appearance of the dairy barns or the methods they used in handling milk. I resolved that the milk sold off our farm would be different, so in the beginning a good many new resolutions were made in regard to handling our milk properly, and we have clung to them.

No white suits are worn while milking the cows, as during the summer months our cows are sprayed daily, hence a white suit would have to be changed quite often; so instead we wear khaki suits, and these are changed three times a week if necessary. During the winter about one hour is spent in brushing the cows, and their udders are washed thoroughly before they are milked; during the summer months they stay in the pasture fields the greater part of the time, hence it does not require quite as much time to clean them. As each cow is milked, the milk is taken directly to the dairy house, where it is first weighed, then cooled to about 55 degrees and then placed in a cooling tank until it is ready to be shipped.

Our dairy house is quite spacious, has plenty of windows and is well screened; the room next to the dairy barn contains the milk scales and the record sheet, a large Chile King cooler, a separator of the best make and a large cooling tank. The second room is our wash-up room. This contains a roomy vat divided into two compartments; one is used to wash the dairy utensils and the other is used to rinse them in. It also has a large steaming stand and an abundance of racks to hold cans, milk pails, etc. The boiler room contains 8 H. P. boiler, Babcock tester, etc. Directly after milking the cows every morning, all milk pails, coolers, etc., are rinsed thoroughly, then they are washed and sterilized later. Not a particle of milk can be found,

hence we have a flyless milk house. Sterilac pails are used to milk in; we have used these ever since we have been in the dairy business and we like them greatly; the strainer top is rinsed after each cow is milked; the milkers are supposed to wash their hands after every cow. A gasoline engine is run morning and evening during the milking hours; this pumps water from a drilled well 110 feet deep, to a large tank; no ice is used, but the cold water and the sterilized utensils must be the reason we never have any milk sour. At present we are milking about twenty-seven cows, though last summer we milked about forty, but owing to the labor situation we were forced to reduce our herd. We have always raised our young heifers, as, owing to the introduction of beef sires in the South some years ago, it was almost impossible to purchase a good dairy cow. However, a number of large dairies have been built in this county the past five years, and one can now find some excellent dairy cows, and from healthy herds. Our cows have been tested annually since 1911, and we have a healthy herd.

Virginia.

Grit or No Grit?

CLIFFORD E. DAVIS

LAST winter I ran out of oyster shell grit for my egg factory and was unable to obtain a new supply for four months. I had seen hens go to the grit boxes and gobble the sharpest oyster shell grit like a small boy stealing cake, but I noticed that I got just as many eggs, or more than when I had the grit boxes full; and that the eggs had just as firm shells as before. They were on free range and picked up many small stones for grit; but these had smooth sides and rounded corners, and the hens went to the grit cups often, turning away with a puzzled air when they found them empty. The boxes were old tin cups and had rusted. They pecked at them until it is an honest fact that they actually ate two of the cups almost entirely up for grit! Soon I noticed that despite green grass and regular food, that liver disease was present in almost every fowl I killed, as seen by the spotted and soft liver, it literally falling to pieces in the process of dressing. Then I killed a hen slacker, just a mere pullet *eleven years old.*

Now, the inner lining of a chicken is thin, and hard to remove; but the same in an old hen is thick and tough, and can be pulled off entire. Incidentally, this same peeled-off lining, well washed and cooked, is the very best cure for dyspepsia, being almost entirely pepsin. Well, this gritless old biddy had an inner lining to the gizzard as thin as rice paper, so that I had to scrape and pick it off in shreds and bits, and her liver was in a bad way. So I am convinced that the grinding of the sharp grit against the walls of the craw and gizzard not only saves food by aiding digestion, but it makes the aforesaid muscular wall stronger, thicker and better able to perform its duties; and also, that the sharp oyster shell grit prevents the inception of liver disease, by keeping all the digestive organs active. Carrying on the simile, I would say that when farmers get afraid of high prices for farm crop seeds, or get the "lame back in 'tater hoein' time," sell out and move to town to take a temporary high-priced job, they are out of grit and need the sharp oyster shell grit of energy to keep them on the job. So let us go to the grit box of common sense, keep our livers active with daily labor, trust in God and stay on the job, for it is up to us farmers to farm all the year round, better than ever before.

Maryland.

Sheep Facts and Fancies

EDGAR L. VINCENT

THE ambition to own sheep is a good one, but better by far the determination that they shall be the best possible. Real success consists not in the size of the flock, but the excellence of the members of that flock. Upon this hang all prospects of winning the best there is. Now how shall we go about it to do this?

UNITED STATES DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
DAIRY DIVISION.

SCORE CARD FOR MILK.

Place M. A. Mahoney
Class 2 Exhibit No. 8

ITEM	PERFECT SCORE	SCORE ALLOWED	REMARKS
Bacteria	35	34.8	Bacteria found per cubic centimeter 1,300
Flavor and odor	15	14	Cowy, bitter, feed, flat, strong
Sediment	10	9.8	
Fat	15	15	Per cent 5.8
Solids not fat	15	15	Per cent 9.44
Temperature (street samples) or Acidity (prepared samples)	5	5	Degrees or Per cent
Bottle and cap	5	5	Bottle / Cap
TOTAL	100	98.6	

Exhibitor
Address Mitchells Va
(Signed)
R. L. Smith, Judge.
Date Feb 17 1920

Taking it for granted that one already has some sheep and wishes to improve his stock, I have found that a good plan is to visit the flock of some man not far away from home, who has better sheep than I have, and buy a good young ram to head my own flock. If this farmer has any number of surplus lambs, it is almost always possible to get one's choice of several. Just here comes in one's ability to pick out a desirable ram. What are some of the physical signs of a choice ram for breeding purposes?

First let me place fair size. By this I do not mean long legs. I would rather have a good big body on medium length legs. Sometimes we are deceived just here: We mistake long limbs for bodily proportions. And then, fine, thick-set wool is another good thing. I do not care for a sheep with coarse wool. It neither looks well nor sells for the best price. Press the wool apart and see if it is soft and oily. This, with good length, promises good wool-bearing stock. The body ought to be trim and well built, with a good-shaped head, capped over the eyes with wool, if the sheep be one of the Shropshire or Hampshire breeds. A bright, sparkling, brilliant eye is an indication of vigor. Finally, inquire into the ancestry of the sheep, particularly as to whether it belongs to lamb-bearing stock of good quality. The ram that measures up to this standard is a safe animal to buy. By mating one's best ewes with a sire of such qualifications we are quite sure to get improved stock very soon.

It may be, however, that the farmer now has no sheep to be improved upon. In that case, he may either apply to some breeder who has sheep of the breed desired for sale, or to the secretary of the association which makes a specialty of breeding that kind of sheep, for most states have organizations promoting the different breeds. If we do not know just where these are, we may write to the state department of agriculture or the Secretary of Agriculture at Washington, for this information. I have found the gentlemen connected with these departments always very courteous and ready to be

(Concluded on page 221)

New Farm Prices

WM. J. WATTS

THERE are many indications that more farms will change ownership in the next year or two than in any former equal period of time. The rush is also coming when very few properties are in fit condition for market. Consequently the owner who ignores the chance for added value through certain improvements, that are not all so expensive they will not yield a net gain in cash sale, will have to accept a lower price or lose his prospective buyer to a neighbor who has used a little more paint, more whitewash, better taste in arrangement of shrubbery, and has, so far as the land will sustain the added cost, installed modern things in house and barn. The buyer of a ten thousand dollar farm today is an individual who appreciates and will pay the price of plumbing, a well arranged lawn, and many other things that make a comfortable home. A farm is not only a place of business, but a place to live and never before have all classes of people demanded as today homes with modern fixtures and artistic appearance.

Some of the touches that make a farm look prosperous are not expensive beyond the means of any thoughtful farmer. Recently as a real estate agent I accompanied a prospective buyer to a good farm, judging from soil and buildings, but he just took one fleeting glance. He had money—many farm buyers have that requirement these days—but he looked around him and then said:

"What is the matter with this location? There is not a well-kept farm in sight."

Neglect in small matters of appearance was the whole trouble. The farm we were on had a neat house, a new barn, smooth, fertile fields, but enough old picket fences, crooked sheds, and shacks to cover a half acre, and some of the farm machinery was on the front lawn. I tried to persuade the man to buy and then eliminate the rubbish by burning it, but he replied that he would not invest money in a community that looked like that one. A hundred dollars spent in making bonfires would net that farmer several times the cost, but instead he is cutting price to make a sale.

The most common mistake in improving farm values is the neglect to make attractive plantings of trees and shrubbery, and carelessness in arrangement of buildings. The cost of planting evergreen hedges, which are useful as windbreaks, or screens

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FERTILIZER GIVES THE WHEAT PLANT A QUICK START

Photo by courtesy Delaware Experiment Station.

There are the same number of plants in each bundle. Fertilizer treatment as indicated. Zero refers to no fertilizer. Study this in connection with the late planting of wheat to avoid the inroads of the Hessian fly

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JULY 15, 1920

The Institute Question

SHALL the farmers' institutes continue as they have for the past twenty years and more in Pennsylvania, or pass out as having served their usefulness? This is the question the farm people of this state will have to decide shortly if we can read the signs correctly. At a recent meeting of the county chairmen of institutes, Secretary Rasmussen of the Pennsylvania Department of Agriculture, opened up the subject and considerable discussion took place concerning the advisability of radically changing these time-honored meetings. The plan proposed was to turn the work over more to the Pennsylvania State College under the supervision of the Extension Department and the county agents. Without wanting in any way to belittle the work of these agencies (because they have accomplished a lot) or underestimate their ability to handle this additional task, in our opinion it would be a mistake to make this change.

The best way to reach a farmer is through a brother farmer and the time has not yet come when the average professional farm teacher meets with universal favor. Men will leave their plow, and women their work, to go hear someone tell how he or she has actually pulled through to success, while the man who can tell only how things ought to be done will attract the few who are especially interested in his subject. He has no "human interest" appeal, which, after all, is about the greatest factor in farm education. A successful man leaves an inspiration for his audience to take back to the farm, but the mere teacher today too often leaves the impression, when everything seems to be against country people, of "what's the use?"

Reference was made at the meeting to the cost of the institutes and figured out per capita for those who attended last year. This seems hardly a fair way of arriving at the value of farmers' institutes. Results are what count, and past results will pay for many years of institutes to come, even if we could hope for nothing more. If it were possible to give only an idea!—a sort of "star" to which to "hook their wagon"—to a fair proportion of the people on the 219,000 farms in this state, the $20,000, which the institutes cost per year, would be well spent, for truly the people without a vision perish. There is more to country life than merely producing more, and what good would teachers be if there were no pupils? Yes, the Secretary has a chance to do something big with the farmers' institutes, because there is room for improvement, but he must view them as a farmer inside looking out rather than as a professor outside looking in.

When Doctors Disagree

THE National Board of Farm Organizations and the National Grange have held post mortems on the late session of Congress, and their findings are no farther apart than the East is from the West.

Th National Board thinks this troubled, long-suffering body fell down flatly and made a mess generally of all measures of vital importance to agriculture. The National Grange, on the other hand, feels that these gentlemen at Washington looked out very well indeed for the farmers' interests. Here is a case where two very eminent doctors disagree. You pay your money and you take your choice.

It is apparently all in the point of view. When you look at a doughnut, if you direct your gaze steadily at the hole and focus your entire attention on this feature, you don't see anything very filling. We, for our part, would rather regard the plump, brown ring around the hole. You can't have the ring without the hole, but the air is full of holes without any rings around them at all.

Congress was bound to leave many things undone, and many bills which would have been acted on had there been time had to go over until the next session. This was inevitable. No Congress in the history of our country ever before faced such a number and diversity of critically important things to be done. Without enumerating the details of agricultural legislation, we think the Grange summarizes the situation very fairly thus: "Not in a single particular did Congress enact a law or approve a policy which is in opposition to or contrary to the spirit of any declaration of the National Grange."

The Horse, too, Gets Tired

HARVEST is one of the most trying times of the year for both men and horses on the farm, for there is a never ending amount of work to do in order to save the crops. The hot sun, bad weather and poor machinery seem to unite to harass and aggravate a man until his stock of patience and good humor is quite exhausted. This is one of the many times in common every day events when true manhood is brought to the test. Too often the anger of the man is vented on the horse, already tired almost beyond endurance by the heavy work, hot sun, flies and chafing harness. So, whatever happens, be kind to the horse, remembering that "he that ruleth his temper is greater than he who taketh a city." When you begin to feel angry get down off your machine, lift the collar from the horse's neck to cool his hot shoulder, give him a drink of fresh water and a mouthful of grass. By this time your anger will have vanished and the same amount of work will be accomplished with less expense of physical energy and self respect.

Protecting the Wool Grower

TWO measures of great importance have recently been put forward for the relief and protection of the wool grower.

The Federal Reserve Board after a conference with growers, dealers, manufacturers, brokers and others interested in the wool trade, has authorized the statement that a wool grower may ship his wool to one of the usual points of distribution, but instead of selling it at the present disastrous prices, he may draw a draft against his bank for an amount agreed on with his banker, and attach his bill of lading as security. Thus, without sacrificing his wool he may obtain for a period of six months the money he needs. By the end of this period market conditions should be more nearly normal.

The other measure, the French-Capper "Truth in Fabric" bill was introduced into Congress at the last session and was left in the hands of the Interstate Commerce Committee at adjournment. It is to the interest of voters generally to do everything possible to have this bill enacted into law at the next session. It is designed to compel manufacturers to stamp their cloth with the percentage of virgin wool and shoddy it contains. That good old term "all wool" is much abused nowadays, and covers a multitude of sins. Shoddy is made of woolen rags re-spun, perhaps several times, and in each case with shorter fiber and thus less strength and wear. Of course, such cloth may be "all wool," but the man who buys the coat is not getting his wool from the sheep's back, but from the backs of other men, each of whom has taken his share of wear from it.

Shoddy has its place and its proper uses if the man who buys knows that this is what he is getting and paying his money for. Until then there are many unscrupulous manufacturers who will use more of the cheaper shoddy and less of the virgin wool, the stocks of which thus accumulate and force down the price at which the grower can sell his clip.

What Does Wheat Cost You?

THE only possible way of making money is to sell something for more than it costs. The cost price is, therefore, fully as important as the selling price, though many people seem to overlook this fact.

An investigation by the U. S. Department of Agriculture shows that the cost of producing wheat in 1919 varied greatly with different farmers. In the case of winter wheat the lowest cost found was $1.00 a bushel and the highest $8.20, whereas the range in spring wheat was from $1.10 to $5.00. The average of all reports on both kinds was $2.15. It is obvious, therefore, that if wheat sold at $2.15 per bushel farmers whose cost was at this figure would just break even, but of all the others half would make money and half would lose.

Wheat is like any other crop—or, in fact, any commodity—in that where one man finds a profit others will have a loss to face. The important thing is to compute as closely as possible just what it costs you per bushel or per ton to grow right on your own farm and under your own conditions the various kinds of crops, taking into consideration not only labor, seed and fertilizers, but all other expenses, such as interest on the value of the land, taxes, wear and tear on implements used, and not forgetting the condition of fertility in which the land is left.

This is an age of specialization and the farmer who follows the example set by industry in this respect (due allowance being made for a proper rotation and diversity) will do the best both for himself and the community.

Our New Serial Story

WE HAVE received many letters indicative of our readers' approval of our serial story "Sunny Slopes," which was concluded in our last issue. In this number we begin a new serial, "A Girl Named Mary," which, as it develops, will, we believe, call forth just as many approving comments. Though entirely different in scene and action, the two stories have this in common: The characters are buoyant, cheerful folk—the kind we all rejoice to know and can take right into our hearts—and the plot is clean, healthy and at the same time interest-gripping. In selecting its serials The Practical Farmer avoids the sensational and the "mushy" and seeks the cheerful, optimistic and sane, seasoned liberally with the spice of humor. We hope our present offering will please.

Bulletin Helps for Farmers

No farmer in this section who grows any wheat at all can afford to neglect any opportunity to gain information about his greatest enemy, the Hessian fly and how to prevent losses from it. The federal government's latest contribution to literature on the subject is Farmers' Bulletin No. 1083. Now is the time to get and study it.

The foregoing farmers' bulletin may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

Cleared Up Land Adds Profit

E. L. VINCENT

We found an old brushlot on our farm when we bought it. Some of the elderberry bushes were scarcely bushes at all, but trees eight or ten feet tall and as large around as one's ankle. The growth was so thick that the cows could not find much to eat among it, and we decided to clear it up and give the land a chance to add something to the farm profits.

It was hard work from start to finish. First we cut off the brush, piled it and burned it. Then we set the stoutest team we knew of to plowing out the roots. That was a tough piece of work. And after the plow and harrow had done their best, we went on with a horse and stoneboat and drew off roots until we had two piles not less than twenty feet high. Some of the roots left in the earth were so long and so firmly attached that we had to hitch a horse to them before we could get them out; but we got them!

That spring we planted corn on that field, and we had as fine a crop as we ever grew. The soil was strong and well adapted to corn. We did not pay as much attention then to the yield per acre as we have since, but as I look back at it I am sure we had not less than a hundred bushels of ears to the acre and they were big fine ears. The corn was followed by buckwheat, which we thought would smother out any sprouts that might still be alive from the brush, and in spite of all the plowing and harrowing and hand pulling there were some of these. We had a good crop of buckwheat, too.

Following the buckwheat we sowed oats, seeding down with timothy grass and clover. We harvested a good crop of oats and got a fine catch of grass seed that holds in yet. We turned the field back into pasture and it is pasture today. Two things were gained. We killed out the elderberry brush and we got a nice piece of pasture land which helps to pay taxes and swell the farm profits. *New York.*

Helping Pennsylvania Farmers to Organize

During the 1919 session of the Pennsylvania legislature the so-called "Co-operative Association Law" was passed. This law permits the organization of associations of persons engaged in agriculture, dairying, or horticulture for marketing and other purposes. During the last year there have been twelve associations organized under the provisions of this act. The interest in this subject is steadily increasing, and frequent requests are made for information regarding the proper steps to follow in forming such an association.

The Bureau of Markets, Pennsylvania Department of Agriculture, has just issued a bulletin, entitled, "Farmers' Co-operative Organizations in Pennsylvania," which was prepared by the former director of the bureau, Guy C. Smith.

This bulletin explains the advantages of the co-operative form of organization as compared to the more common stock company. The two most important points are the system of voting and the method which is used to distribute surplus funds at the end of a year's business. In a co-operative association it is most common for each member to have one vote and only one, regardless of the amount of money which he puts in to help finance the organization. Any surplus left at the end of the year, unless it is kept in the business for working capital, is divided among the members in proportion to the amount of business which each has done through the association during that year.

Every such organization should have enough members so that there will be a sufficient volume of business to reduce charges to a low figure. The form of organization should be such that the association will be assured the business of its members during the entire year. There should be ample funds available for the conduct of the business, and also to provide the proper equipment in the way of warehouse, plants, etc. A considerable amount of capital can be raised by this system of financing without the use of stock in any form.

Two other very important points to be considered in the establishment of co-operative organizations are the management and the accounting system. Unless both of these points are handled in the very best manner, the success of the business will be very doubtful.

There are a number of steps which are necessary in the organization of a co-operative association, and sample forms are given in the bulletin. The most important of these are the by-laws, which govern the operation of the association. These will need to be slightly modified to fit the needs of the individual case, but in the main the chief points to be observed in the formation of the association are brought out in the by-laws.

Make the Package Attractive

The desirability of packing farm products in clean, sound containers is again emphasized by the loss of $350 recently suffered by a producer in connection with a single shipment of butter, say specialists of the Bureau of Markets, United States Department of Agriculture.

This farmer shipped in barrels unsalted butter that scored 89 points. Because of the dark gray color of the barrels, which suggested packing stock butter, the receiver was unable to interest buyers in the commodity. Realizing that he would be unable to sell it at all in that condition, he salted and reworked the butter and then packed it in butter tubs. Although the butter had deteriorated in quality by this time, the appearence of the packages commanded the attention of buyers and the butter was promptly sold. The loss to the shipper was practically 8 cents a pound, or over $350 on the entire shipment—a loss that would have been avoided in the first place had the shipper packed the butter properly, and a loss that would have been greater had not the receiver done so. The same principle applies to eggs, beans, or any other commodity, say the bureau's experts. If the packages present an inviting appearance, the sale is half made, for good looking packages suggest contents of high quality.

Another illustration given by the Bureau of Markets is that of a country creamery that forwarded a 5-tub sample shipment of butter to a commission firm and received an offer for future shipments. In the next shipment the creamery used second-hand tubs instead of bright, new, clean, attractive packages, such as were used in the 5-tub sample. Although the butter shipped was uniform in quality and scored 92 points, the commission firm was unable to dispose of it as "extras," and the shipper was compelled to take a loss of 2 cents a pound on the shipment.

Spray Grapes for Leaf Hopper

Early in July spray the grapes for the grape vine leaf-hopper, if present. This minute insect when present in numbers can cause the loss of the crop. Badly infested vines fail to ripen the fruit properly, it lacks sugar and so the fruits are not good for table purposes or for wine. Use a tobacco extract containing 4 per cent. nicotine sulphate diluted one part to 1,600 parts of water, and to each 50 gallons add a couple of pounds of soap. Use a nozzle throwing a coarse spray. A fine nozzle is not effective.

Weed Seed at $25 a Bushel

Sweet clover, formerly considered a rank weed, is now being grown for seed by an increasing number of farmers. This "weed" seed now sells for $25 a bushel.

When growing seed for this purpose, it is well not to have an exceedingly thick stand. It is seeded on wheat or rye in the spring. A hay crop can be cut in the fall if it is desirable to do so; otherwise nothing more is done to it until the following spring. To insure a seed crop, the first growth is allowed to mature seed rather than to attempt to secure both a hay crop and a seed crop. The ordinary grain binder is the most satisfactory machine with which to harvest the crop. Care must be exercised in cutting it so that it is not too dry, or it will shatter badly.

Probably the best way to thresh the seed is to run it first through a regular grain thresher and then through a clover huller. Yields of seed vary from two to ten bushels per acre.

This and further information concerning the culture of sweet clover is contained in a free circular just issued by the Agricultural College Extension Service, Columbus, Ohio.

Sugarless Jelly

A recipe for sugarless jelly is likely to become popular this season if present prices on sugar are maintained. Members of the staff of the home economics division of the Minnesota College of Agriculture have evolved a recipe in which honey or syrup or a combination of both is substituted for sugar. If the fruit juice after straining is thin, it should be boiled down until it is of the consistency of thin cream. For each cup of juice measure out three-fourths of a cup of honey or syrup or a combination of both. The best results have been obtained, it is said, from half corn syrup and half honey. Add syrup to the boiling fruit juice and cook until the usual tests for jelly are obtained.

Removing Stains

With the coming of summer, the problem of removing fruit stains from table linen and garments is bound to perplex most housekeepers. Of all stains they are, fortunately, said to be the most easy to remove.

Spreading the stained portion of the material over a bowl and pouring boiling water from a height so as to strike the stain with force will usually remove it. Camphor likewise is used with good effect. Some fruit stains, however, are more obstinate than others. Glycerine sometimes helps in removing peach stains.

Iron rust may be removed in various ways. One way which is effective with white materials is to wet the stained part with borax and water or with diluted household ammonia and spread it over a bowl of boiling water. A 10 per cent. solution of hydrochloric acid, which may be obtained from any druggist, poured drop by drop on the stain until it brightens and then immediately washed out with water, is also used. A 10 per cent. solution of oxalic acid may be similarly employed. In either case, a second application may be necessary. A mixture of salt and lemon juice rubbed into the rust stain and placed in the sun sometimes will remove the rust. This is, however, a much slower process.

A solution of ammonia and water or alcohol and water will remove grass stain. Either solution should be treated on a sample of the material and its effect on the color noted before it is applied to the garment.

Mildew may be removed by soaking the stain in a weak acid, such as lemon juice or vinegar, and exposing it to the sunlight, or by wetting it with a paste of soft soap and pulverized chalk before exposing to sunlight. Where the mildew is very bad, a bleaching agent, such as javelle water, may have to be used.

Scorch from an over-hot iron may be removed by soap and water, or by dampening the spot with water and exposing to sunlight for a day or longer. A slight scorch may be rubbed away with a bread crust.

All stain removers which are poisonous should be plainly labeled and kept out of the reach of children.

A trial test should be made of any reagent by placing a drop of it on an inner seam of the garment to note its effect on the color and texture of the fabric from which the stain is to be removed.

Paint Prolongs Life

The varnish on carpet sweepers soon wears off. Unprotected as it then is from moisture and variations in temperature, it is likely to fall to pieces. This can easily be prevented by applying a coat of stain finish, obtainable at any paint store, whenever the machine shows the need of it.

Washing machines should also be protected from variations of temperature and moisture. When the original finish shows signs of wear apply a coat of colored enamel.

A little attention to these details on the part of housewives will prolong the life of utensils or utilities which cost considerable money to replace nowadays.

Some Experience with Concrete

WM. H. BLACK

My first experience in the use of concrete was in the construction of a large tank to supply water for farm use, and in this I had the help of a man who understands its use. In all later work I did without help. I put a circular concrete curb, four feet in diameter and five feet deep, as an anti-freezing chamber, around the bored well. I put a two-inch offset two feet from the bottom to carry a floor, thus forming two air chambers, and we never had any freezing trouble, except once when the wind wheel was left in gear in a light wind and the water in the pump was kept up, and, freezing slowly, the rod broke. The foundations to the chicken houses and corn crib were satisfactory. We put in a septic tank which has been in use for seven years without attention.

Being no longer able to carry on farming, we sold and bought a small country home, and here we have about duplicated our farm experience. We curbed another well, put in foundations for wood house, poultry house, carriage house, a concrete floor in the basement, cellar steps, boxed cellar windows, and put in another septic tank. After the latter had been in use two years we found the water from the outlet was injuring a tree, and on taking up the tile to change direction, there was not a bit of deposit, thus verifying the statement that only clear liquid outflows.

We have found concrete cheaper than stone or brick foundations as no expert help is needed, and material is more easily obtained. Where a nice smooth surface is desired planed lumber must be used, and white sand in the ratio of one of cement to three or four of sand, the usual 1-3-4 being used under and back of the final coat. In putting in foundations, I have been putting three-inch tile a little lower and a little outside the bottom wherever a connection with a tile system can be made.

Pennsylvania Farmers' Institute Plans

Farmers' Institutes during the 1920-21 season will be limited to one-day sessions in each community, except in rare cases where conditions make it advisable to hold two-day sessions. Morning institute sessions will also be eliminated during the coming season.

These changes were decided upon at a conference which Secretary Frederik Rasmussen, of the Pennsylvania Department of Agriculture, held with the county institute chairmen at Pennsylvania State College in connection with Farmers' Week.

It developed at the conference that where the practice has been to hold two-day sessions, the attendance at the first day's meeting was always extremely small and that there was little interest in the first day's program. It was also the concensus of opinion that morning sessions were of little value on account of the small attendance, except in such cases where communities have featured a dinner or similar attraction each year that brought out the crowds in the mornings. In scores of cases during the past winter, speakers were forced to drive eight or ten miles, late at night through zero weather, arriving at their destination long after midnight, in order to be on hand for the opening session of institute the following morning, only to be greeted by an audience of a dozen or less.

Secretary Rasmussen also announced that the Department of Agriculture would follow the same course as in previous years in regard to securing meeting places, the department always having insisted that the community furnish a meeting place for the institute sessions, as an evidence of the community's interest.

The plan of sending to each community, speakers who have specialized in subjects of particular interest to that community will also be adhered to, while arrangements have been made for the co-operation of the State College Extension Department in furnishing home economic and similar specialists where their services are wanted.

Leguminous Hay Predominates

Alfalfa now has an acreage greater than that of any other legume or grass cut for hay, not growing in combination with another. Of the total tame hay acreage in 1919, alfalfa occupied 21.1 per cent., timothy and clover mixed 18.2 per cent., timothy 15.9 per cent., clover 12.3 per cent., pea 8.7 per cent., grain cut green 7.7 per cent., and all others 16.1 per cent. If the acreage of the timothy and clover mixture is equally divided between those two plants, the timothy acreage becomes 25 per cent. of the total of tame hay acreage, and clover 21.4 per cent., so that timothy is still the leading hay plant and the clovers have second place, a little above alfalfa.

The leguminous plants, alfalfa, clover, one-half of clover and timothy, and pea are 51.2 per cent. of the tame hay area, and it is a significant fact that more than one-half of the tame hay acreage is now devoted to plants of the nutritive and soil improving properties of the legumes, whereas, 10 years ago, as the census testifies, hardly one-third of the tame hay area was leguminous. This comparison has been established by the Bureau of Crop Estimates.

Making Parents' Meals Fit Children

How to prepare a meal which shall answer for the adults and still meet the needs of the children in the family has perplexed more than one housewife who has become convinced that after all there is something to all this talk about the relation of proper food to health.

It is quite posible, food experts say, to adapt for the children almost any meal properly prepared for adults.

Here is a way a Sunday dinner might be adapted, as worked out by the school of home economics at Cornell:

The meal consists of steak, baked potatoes, creamed carrots and peas, lemon cream pie, whole wheat bread and butter, and coffee or milk, and contains enough food calories for a working man. The family for which the meal is planned consists of a man who performs manual labor, his wife and their children, a boy of twelve years, a girl of seven and a boy of three.

It is planned to use the standard ration of at least a pint of milk for every child and a half pint for each adult, which health authorities insist every family should use for economy in food selection and as a protection against undernourishment and disease.

The meat is for the parents and the older boy; the grown-ups have the larger amounts of fat and the boy very little fat. The girl of seven is allowed only a small amount of meat, finely cut, and the child of three has no meat; he takes his animal food in the form of milk.

The baked potatoes may be eaten, including the skins, by all except the three-year-old, who takes only the inside of the potato, finely mashed. The use of the potato skins by the adults increases the amount of iron taken, in which it is said too many American dietaries are deficient.

All members of the family eat the creamed carrots and peas, although they are finely mashed before being served to the youngest child.

When it comes to the dessert, the process of elimination begins. The lemon cream pie will do for the adults and the twelve-year-old, but the mother has taken the precaution of baking the filling in custard cups for the two youngest children, and on the baby's cup the meringue is omitted.

The parents may have coffee if they wish, but the children will drink milk. By the time they are twenty-one perhaps they may safely use tea and coffee; but by that time the milk habit may be so firmly fixed that they will continue keeping "old age away by a ration of milk a day."

Sheep Facts and Fancies

(Concluded from page 218)

of all possible assistance to those who are in search of information, not only along this, but every line of farm industry.

Another thing I believe should soon be taken up by the farmers of this country, and that is the question of the importation of the meat of lambs and sheep from other countries. It is only a day or two ago that I learned that about half a million carcasses of lambs from New Zealand had been brought in here and sold as native stock. The bottom went out of the lamb market immediately, as we might expect it would. How can American farmers do anything with such competition? And we are told that there are many more shipments to follow, not only from New Zealand, but from South America. There is no more sure way of killing the home growing of sheep than this, and we ought to see to it that our Congressmen give us laws protecting us from encroachments of that sort.

Before getting sheep on the farm, one of the first things to be done should be to put the fences around the pastures in good condition. A poor fence will soon lead to disorder among the sheep. It is almost impossible to break sheep of the habit of getting out after they have once contracted it. For this reason the time to begin is beforehand. Every sheep pasture should be well fenced; not only that, there must be water in good supply. The best pasture for sheep is on high, dry ground. They will do far better there than they will on low, wet ground, which always tends to the onset of disease. *New York.*

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New Farm Prices

(Concluded from page 218)

to hide unsightly premises, is not expensive. Fruit trees are decorative, if carefully selected, make shade, and make an income from ground that is often wasted. Odd varieties of fruit and nut trees can be gotten from nurseries to add novelty to the lawn and a pleasing variety to the farm table. Hardy roses especially adapted to use in hedges, are more extensively used every year to make variation in monotonous lines of fences, as covering for undecorated masonry, etc. A dwelling should have no other buildings close in front of it. An old coal shed, chicken house, or garage, not only cuts off the view, but is entirely out of harmony with everything in a front lawn.

Of all the disappointing, neglected farms, I think the large, well appointed one that simply looks neglected is the most to be deplored. Within twenty miles of some of the big cities, and on hard roads, there are farms worth twenty thousand and up, but they are almost impossible to put on the market because they have the big improvements but look shabby. A property of that sort must wear a neat, business-like appearance. A typical one was recently inspected with a prospective buyer who was unable to see that only superficial touches were needed to make the appearance first-class. If the owner of that farm had turned a hose on the cow stables, which were entirely up-to-date, and washed the walls and flushed out filth and odors, and sprayed the walls with whitewash or paint, the barn would have made the required impression. Many buyers have the idea of doing things the ideal way. The house in the case needed one coat of paint to show it off. The walks, drives and hedges were not trimmed and lost their effects. This buyer took a fancy to another property that was in full dress.

According to the U. S. Department of Agriculture estimates, the plow land in this country has increased 70 per cent. since 1914. The increase has been greatest farthest from large cities, but there are now indications that country homes within commuting distance of offices and factories will soon be at a premium. Therefore the owner so located and who wants to sell will prepare to catch the eye of the "business man" type of buyer. Also the people who are willing to go far from cities and farm entirely for a living will demand a better house and home than was considered necessary a few years ago. Judgment has to be used to determine how much expense a farm will stand, but due to the fact acreage prices have advanced, the buildings and lawn should not hinder realizing all the land will bring if sold. When the buyer figures on making the repairs and adding the touches of paint, etc., he plays safe and exaggerates the faults in order to get a bargain. Real estate agents would rather handle a first-class article. They are easier to sell, bring a price that pleases the one party, and makes the other one feel he has gotten something good. Fields with crops on them always sell at a tremendous advantage over weedy ones. A hilly farm is bad, but one that shows washing is almost impossible. It is not always dishonest value whether a sale is desired or not. The increase in taxes should not be considered if there were any. Nothing makes for a good family like a beautiful, well kept home, and we have noticed they are nearly always associated.

Pennsylvania.

Some persons wonder why their umbrella stays always break loose at the tip, or ferrule. It's probably because they stand their umbrellas in a corner to dry, handle end up, and the water runs down and rusts out the joints.

Gone, But Not Forgotten

"Are caterpillars good to eat?" asked little Tommy at the dinner table.

"No," said his father; "what makes you ask a question like that while we are eating?"

"You had one on your lettuce, but it's gone now," replied Tommy.

Sings a nameless poet: The old hen sat in a leafless tree and said, "Nobody cares for me. My food is what I find about, I hunt for it till I'm frazzled out. My owner says I do not pay, and that I ought to sing and lay. I wish he had to sit out here and live on pickin's all the year. I'll bet a half a cent, by jing, he wouldn't lay from now till spring."

Incomplete reports show that nearly 19,000 farm bureau members were secured during the membership campaigns conducted in 13 Ohio counties, beginning February 1st, under the supervision of the Ohio Farm Bureau Federation. In each county greater interest is being taken in the farm bureau since the fee has been increased to $10 a year for three years than when it was $1.

"The hens do not belong in all the garden, nor all the garden in the hens," observes a man who has had experience keeping 'em shooed out.

WASTED STRENGTH AND HAPPINESS

EDGAR L. VINCENT

OUR old farm dog, Ted, chased a woodchuck up a tree the other day. It was a warm morning and Ted had been watching for that woodchuck for some time. He remembered the habits of the animal, and planted himself squarely across the woodchuck's pathway, so that he could not get back to his hole without meeting with trouble.

But that creature of the burrow was shrewder than Ted gave him credit for being. He came near enough to the dog to see what danger was menacing him; then he turned and took a bee line for the nearest tree and up he went, Ted in hot chase after him; and there he sat away up on a high limb and fairly sneered at his pursuer.

There Ted stayed the rest of the forenoon. Now he would walk round the tree, looking up at the prey which had slipped out of his claws. Again he would sit down and wait, but all the time he was making the woods ring with his excited yelps, which did not seem to disturb the woodchuck. There he sat and waited for the dog to tire himself out with his barking and his fruitless springing up the trunk of the tree as far as he could, only to fall back, hot and weaker with every bound.

There could be only one end to such a chase. Ted wasted his strength barking at the creature so far beyond his reach; he got hungry and finally slunk away disappointed and defeated. The rest of the day he was good for nothing. Flat on the ground he lay on the grass, perhaps dreaming of his lost victory.

Have you never chased the unattainable? Most of us have. Never in all my life have I seen so many men as there are at present, and not a few women, who are wasting the best there is in them in things just as senseless as Ted's barking after that woodchuck, out of his reach in the top of the sapling. Today it is a dream of political preferment. We put into it the utmost of time and strength, all the time knowing, if we stop to think about it, that the thing we seek is beyond our reach, and that even could we attain it, there would be very little satisfaction in it. Oh, the wasted energies and the lost happiness which come from this kind of human endeavor!

Or it maybe some day we have a vision of great wealth. If only we might come into possession of millions, how happy we would be! And we run and we cry out and we chase the phantom hotly, realizing every minute we are doing so that it is all for nothing, a dream that will vanish with the going down of the sun. So we come to the end of the day, tired, discouraged, disappointed and declaring that no life is worth the living.

But are we wise to come to that conclusion? Shall we give up all endeavor? Is there nothing but failure for us in this world? Ah! we do err when we say that! For He who has planted in the bosom of us all the hope of achievement and the dream of aspiration has with the vision given us all needed means for its fulfillment. The one thing He would have us be very sure about is that the object of our quest is the worthiest possible. Ever He longs that we shall seek the worth-while; and for the man and the woman who do this with honest purpose, there ever waits the highest possible success?

Why, then, be so determinded about the poor, fleeting baubles of the world of today? The moment we touch them they fade and lose their beauty. Reach up for the best, the truest and the most worthy. In farm, in field, in shop or in office that best always invites us, and God Himself puts His hand under ours to attain it!

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Points on Selling the Crops

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1297, AUG. 15.—The value of the lightning rod as a protection to farm buildings against lightning is still questioned by some farmers. Have you had experience with lightning rods? If so, how long and what has been your experience and observation with farm buildings rodded and not rodded? Give a description of your rods, material composed of, cost per foot, etc.

TOPIC No. 1298, SEPT. 1.—Every farmer throughout the land knows the wastefulness of the leaky barnyard, yet, strange to say, most farmers permit this leak to at least some degree. Perhaps you have had some experience in repairing a leaky barnyard by building a stone wall or the use of concrete, or diverting outside drainage. If so, tell us briefly how you did it, the cost and results.

W. A. T., Lima, Pa.—Last year we had a large lot of Kieffer pears to market and did not have the time to haul them away. We put them in the cellar so they could "cure" (something most people with only a few trees neglect to do) and then looked around for a customer. In order to save handling them too much we had obtained a large lot of empty orange boxes. Some were given to us and some we bought for two and five cents apiece. This year we are starting to collect our supply of carriers earlier, so we can get more of the "free" kind which some grocers are glad to get rid of in these days of "cash and carry." We found that these oblong boxes held over a bushel, were easily handled, set firm when being hauled from the orchard, and could be piled three and four high in the cellar.

If we had wanted to sell our pears on commission row, or place them in stores, they would have had to have been in standard "five-eight" baskets, and these would have cost 12 cents apiece. We therefore had a commission man come to the farm and buy the whole lot as they were. The following day he sent his motor truck out and we loaded three tons of pears on it. He had left his check for $1.25 a box, so we were satisfied to get rid of our crop with such little effort.

Mrs. E. M. A., Ashville, N. Y.—Yes, wagon or stock scales are absolutely necessary, both in buying and selling. We haven't any ourselves—not many people here have—but we all plan to use someone's when needed. Most commodities are bought from or shipped at the traction switch at the Fruit Growers' Association headquarters, and everyone uses the scales there. Most people sell to the Association anything the Association handles. They don't buy live stock, so we all make the best bargain we can with the local dealers separately and individually. Yes, people have all kinds of trouble getting cars, and so does the Association. Not very much hay is shipped, but wool, fruits and many other things are taken to the city either by auto or motor truck.

T. H. W., Media, Pa.—The other day I was visiting in the lower end of Chester county and came across an interesting marketing problem. This district is the greatest mushroom producing center in this country, and has been hard hit by the express and railroad difficulties we have been having. New York City, one hundred and twenty-five miles away, is their greatest market and they have a perishable product to get to it. In the good old days when the express companies ran their business as if they wanted their traffic to increase, goods could leave on the late afternoon train and be in New York for the next morning's market. Some care used to be taken, too, with the way the baskets were handled, and should one occasionally be lost or broken, a bill for it to the company was soon paid. It got so, however, that thousands of them were lost to the growers with little hope for redress, and there was no telling if a shipment would make the early market. Parcel post was then tried, but as it went by train also, and was transferred in Philadelphia, it was little, if any, better.

The end of the war found thousands of big motor trucks on the Government's hands, and some of these have solved the marketing problems of many country people. During the height of the mushroom season through 5-ton trucks were run direct to the commission houses in New York City. Four, six and eight 3-pound baskets securely tied together were handled as parcel post matter, and for a few cents were taken where the railroad could not get them. As much as three tons were handled at one postoffice as a day's shipment, and several trucks were required to handle all the business originating on the route. Not having to be transferred in any way, the mushrooms reach market in first-class condition and many of the growers call the new system a Godsend to their industry. Asparagus and hothouse tomatoes were handled in the same way. One of the large New York commission houses also sent a big truck into this district for a large load to be hauled direct to them. They went the parcel post trucks one better by guaranteeing the shippers the next morning's prices even if for some reason the truck did not arrive in time for the market.

Making the Kitchen Pleasant

Make the kitchen attractive. Work out a color scheme. Use curtains, potted flowers, bright bowls, a gally-colored basket or whatever will make the kitchen a place in which work will be enjoyable. This is the word of the home management workers at the New York State College of Agriculture, who say that the kitchen in an economically correct house should be a pleasant workshop instead of a place of drudgery.

They advocate the use of light colors, such as tan, warm gray, pale yellow, or grayish green for painting the walls and woodwork, because light colors have a practical value in reflecting and distributing light. They say, further, that drab, dark gray, blue or other dull colors absorb the light and depress the worker.

Among the points of value in planning or remodeling the kitchen, are the following:

The work space should be left free and open.

There should be windows on at least two sides of the kitchen for light and for air circulation.

Windows should be high, with sills at least three feet from the floor, to save table space beneath the windows.

Equipment should be arranged in a logical sequence according to use. Thus, supplies should be stored near the place where they are most used.

A rest corner away from sink and stove should be a part of every kitchen; this provides an easy and convenient place for momentary relaxation.

It further states that kitchen work should be condensed into a small, step-saving space; every task, except those connected with food, should be left out of the kitchen. Laundry work should be provided for in a separate place.

For the farm homes which may not have modern conveniences, the College advocates that they should be installed as rapidly as the income will allow. Among those that deserve first consideration in the order in which they should be provided, are a dry, light, useful cellar; a plumbing system that provides clear running water and disposes of the waste; a central heating system to simplify the problem of winter comfort, and artificial light, preferably electricity or gas, for saving eyesight and labor.

These facts are set forth in a new publication, "Economics of a Sound House," which is sent free on request for H 131. This is part of a series of nine thrift bulletins, any of which may be obtained by writing to the New York State College of Agriculture at Ithaca, New York.

No Harm Done

Girl (to druggist).—Could you fix me a dose of castor oil so as the oil won't taste?

Druggist.—Certainly. Won't you have a glass of soda while waiting?

(She drinks the soda.)

Druggist.—Something else, Miss?

Girl.—No, just the oil.

Druggist.—But you just drank it.

Girl.—Oh! It was for my mother.

Even the kitchen sink trap needs an occasional bath. This is the way: Flush the sink with at least a gallon of hot water. Then while the pipe is still warm pour in one-half cup of kerosene. Let this stand for five minutes or longer and then flush again with more hot water.

Two methods of preparing food: Accurate measuring and mixing, and "the look and feel method." The former method is the safety first rule; the latter only for the experienced hand.

Plan to utilize all the tomatoes from the home garden. Few vegetables can be utilized in so many ways. Ketchup, preserves, pickles, soup, chili sauce, meat dressing, are only a few.

A tireless worker is the tile drain. Day and night, while the ground is wet, it keeps at its job and asks no pay nor feed.

The main object of cultivation is to kill weeds; some moisture may be conserved, but that is secondary. Corn roots are still spread out and cultivation should not be too deep or too close to the row, and only frequent enough to keep down weeds. Cultivate potatoes lightly to give a fine, even surface between rows. Ridge up the earth to cover weeds, or go through with hoes once during the season. Continue cultivation until vines cover the ground.

Lambs should be fed a little grain on summer pasture to make a good growth and have a satisfactory finish at marketing time. A mixture of three parts cracked corn, two parts crushed oats and one part pea cake makes an excellent grain mixture for young lambs.

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The Women's Exchange

This is the farm women's *own* department—for them and by them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

AUGUST 15.—Clothing is so expensive these days that one thinks several times before throwing away the worn garments that in other days would have been considered beyond redemption. How do you use castoff garments of any and all kinds? The story of your successful "schemes" will help other housewives who hate waste.

SEPTEMBER 1.—One correspondent proposes that we discuss "different ways of putting up peaches," while another asks for "cucumber pickle recipes." As they are both seasonable, let's combine these two topics in one Exchange. Give your recipes briefly but fully.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Refreshing Summer Beverages

Miss E. G., Buchanan, Va.—For those who feel the need of a stimulating drink at noon, we find a refreshing substitute for hot coffee in what we call "co-tea-lem." Over 8 heaping teaspoonfuls of finely ground coffee pour 2 cupfuls boiling water and stand in a hot place to steep for 5 minutes. Over 4 teaspoonfuls Oolong tea (or your favorite brand) pour 1 cupful boiling water and steep for three minutes, then strain both brews through cheesecloth into a jar or bottle and stand on ice or in a cold spring. Brown 1 pound of granulated sugar (without water) in a hot skillet, adding boiling water to dissolve, but not enough to make the syrup thin. At serving time add 5 cupfuls (more if not required so strong) cold water to the coffee-tea brew, sweeten to taste with caramel syrup (the above syrup will last some days) and add enough lemon juice to give a pleasant acidity.

Strawberry acid of "ye olden days" is made as follows: Dissolve 5 ounces of tartaric acid in 2 quarts of cold water. Pour this over 12 pounds of fresh ripe strawberries in jar or bowl and let stand 48 hours; strain carefully, not bruising fruit. To one pint of clear juice add 1 pound granulated sugar. Stir until dissolved. Let stand a few days and then bottle. Tie muslin cloth over the mouth of bottles in case a slight fermentation occurs. In ten days cork tightly and keep in a cool, dark place. The whole process to be cold. Dilute to taste with cold water or shaved ice.

Mrs. B. C., Springville, N. Y.—Personally, I would not serve hot coffee with every meal during the warm weather. I would serve one of the advertised cereal drinks, iced, or make a honey-cereal drink and serve it cool. The home-made honey-cereal drink has one advantage over any package product; it is cheaper, even if you count your time as money, and it will be sure to be pure if one has bees and a grain mill. The package cereal drinks, or the home-made, can be prepared in the morning and kept in the ice box until needed. I would serve iced milk or buttermilk once a day, or more often if there are children in the family.

Chilled grape juice, to which has been added the juice of an orange and a tablespoonful of alfalfa or clover honey to each pint of juice, is a drink fit for the gods, and will give zest to any meal, and to my mind is vastly more healthful than coffee, hot or cold.

A fine, cooling drink for the men in the hay field is made with maple syrup, ginger and a glass of vinegar and cool spring water or chilled in the ice box before carrying to the field. There is no especial recipe, some preferring more sweet than others; the housewife will quickly learn the taste of the men to whom she serves this drink.

My father attributes his freedom from sunstroke or overheating to the fact that from a young man up he always drank this "ginger water" while haying and harvesting.

That common summer beverage, lemonade, will be just as tasty and refreshing made as for hot lemonade and chilled before serving, and it eliminates all fear of germs in the drinking water.

Fruit punch is easily made and is delicious for serving in the evening. Farmers who raise fruit can have this drink from June to October.

Fig lemonade is soothing to an irritated throat and sometimes relieves a cough. A fine nectar is prepared thus: Pour over 12 pounds of fruit (clear or mixed kinds) 2 quarts of boiling water. Let stand for twenty-four hours; strain and add one-half pound sugar and three-fourths cup of corn syrup to every pint of liquid. Stir well and put in 5 ounces of tartaric acid. Put in fruit jars and use two tablespoonfuls to each glass of water. This is a fine drink for any meal or between times.

Mrs. C. H., Sylvania, O.—Pare a pineapple, cut into small pieces and crush to a pulp; set on the stove in a granite saucepan and heat to the boiling point; cook until soft; strain, and to each quart of juice add 1½ pounds of sugar. Skim and set at back of stove for five minutes after sugar is added. Let cool and bottle. Make an individual drink by combining one-fourth of a glass of this bottle syrup, two teaspoonfuls of shaved ice and the white of one egg which has been beaten until stiff; fill glass with cold or carbonated water, as desired. If necessary, one egg white may be made to do for two or three glasses.

APPLE BLOSSOM COCKTAIL.—Take two ounces of grape juice (white preferred), one teaspoonful of sugar, one glass of fresh milk, a dash of Florida water, ice; shake well. Serve in cocktail glasses. This is sufficient for two glasses.

CANADIAN FOAM.—One cupful water, one cupful of sugar, juice of a lemon, two small tablespoonfuls of cornstarch; mix and boil until clear; then beat three egg whites to a foam and add to the mixture. Serve in glasses.

FRUIT PUNCH No. 1.—One quart cold tea, juice of two lemons, juice of two oranges, one-half pineapple which has stood several hours in sugar, one cupful of strawberries, one cupful of raspberries; the fruit, if fresh, should be crushed. (I often use canned fruit for mine.) Add one and one-half quarts of water; sweeten to taste. Put into a bowl with cracked ice or set where it will chill.

FRUIT PUNCH No. 2.—Juice and pulp of one-half dozen oranges, juice of three lemons, one can of sliced pineapple cut into cubes, one can of white cherries, five bananas, sliced, two quarts of water; sweeten to taste (if desired, color with raspberry juice). Serve with cracked ice.

A good field drink. One egg, beaten, one-half teaspoonful of ginger, two tablespoonfuls of sugar, one tablespoonful of good cider vinegar; add one quart or more of water. Use as soon as possible.

Mrs. G. S. D., Denton, Md.—Lemonade made with one lemon and two-thirds to one cupful of sugar, to two quarts of cold water, is one standby for hot weather, especially for dinner. We never have hot coffee for our own family, except once a day, at breakfast. At night we use cold milk with bread, crackers, brown bread or johnny cake, so need no extra cold drink. Between meals we have fruit juice and water, sweetened to suit the taste.

Canned crab apple, rhubarb, grape, strawberry, raspberry and blackberry juice are all good, but I do not usually have enough berries to have much juice from those to spare. Orange juice also makes a delicious drink, alone or with grape and other fruits.

I have made Hires' root beer from the extract, following directions, but being careful to keep very cold after it had barely started to work, and making only what we could use before it got strong, as we do not want any large per cent. of alcohol. Cold coffee is very good if fixed to taste while warm.

We used to buy an ounce of tartaric acid and dissolve in two quarts of hot water with 1½ pounds of sugar, boil until clear, making a foundation syrup for soda water, using about one-quarter to one-third of a glass with one-half glass of cold water, some vanilla or fruit juice, coffee, or a syrup made of cocoa, sugar and water cooked together and cooled; then add cream to any of these flavors, and lastly, about one-quarter teaspoonful of soda; stir rapidly and you have a fair substitute for the soda fountain drinks.

Another foaming drink is the old-fashioned sweetened water. Take two teaspoonfuls of maple syrup, sorghum or store molasses, a little vinegar, just a bit of ginger, stir together, fill glass

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9089.—Ladies' waist. Cut in sizes 36, 38, 40 and 42 inches bust measure. Pin tucks at the front of this waist and lace ruffles about the collar serve for trimming.

9666.—Ladies' one-piece dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. A panel of self material starts at the square neckline and extends to the lower edge of the skirt.

8925.—Ladies' shirtwaist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. The shallow collar of white wash satin is notched to give a neat tailored finish.

9357.—Boys' suit. Cut in sizes 2, 4 and 6 years. The coat is cut on straight lines with a single-breasted closing, revers and a sailor collar.

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9082.—Ladies' dress. Cut in sizes 36, 38, 40 and 42 inches bust measure. The waist is made with kimono sleeves and the one-piece skirt is gathered.

9673.—Ladies' two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. Dart-tucks extend across the top of the front gore, giving a fitted effect.

9679.—Girls' and child's petticoat. Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. Combining the advantages of a princess slip with a full gathered petticoat is this style.

9310.—Ladies' dress. Cut in sizes 34, 36, 38, 40, 42, 44, 46, 48 and 50 inches bust measure. Suitable for the stout woman is this one-piece frock of linen.

Our Latest Fashion Book

Owing to the number of departments in THE PRACTICAL FARMER, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents, postpaid. Address
FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

about three-quarters full with cold water, stir again, add one-quarter teaspoonful of soda; stir.

After all, nothing seems quite so good as sparkling cold spring water or cold milk, or both together.

Mrs. H. M. S., Johnstown, Pa.—Grape juice is a good and healthful drink for the hot days and evenings, and not very expensive, either, when we put it up ourselves in the fall when grapes are plentiful in almost all parts of the country. I boil the grapes, press out the juice, re-heat the juice and can it either in bottles or jars. If I have sugar when I can it I partly sweeten it; if not, I just can it without sugar and it keeps just as good. When I open it I mix it with water and sweeten to suit the taste. It is very refreshing and should be served rather cold.

Lemonade is also a very refreshing and healthful drink, and surely everyone knows how to prepare it.

Rhubarb stewed and strained and the juice sweetened to suit the taste is another good and healthful drink. All of these drinks take quite a lot of sugar, but we do not use the juice as strong as some people, so, of course, it does not take as much sugar to sweeten it.

A drink we used to like, and make very often when I was a youngster, was old-fashioned vinegar punch. This is very refreshing, but may not be as healthful as the others mentioned. We took good cold water and stirred just enough vinegar and sugar in it to make it taste right.

Serving coffee at every meal is not at all necessary, unless some member of the family prefers it to anything else. We always have coffee or cocoa for breakfast, and coffee for the noonday meal, as we usually just eat a lunch, often cold except the coffee. But I don't serve it as bitter strong as some folks; we do not like it so strong. For the evening meal we often do not have any hot drink. Good cold milk is one of the best drinks for supper, when we can get it, but it is not always possible to have it unless one keeps cows. Iced tea is also good for supper, or for lunch if one prefers it to a hot drink.

B. B., Tully, N. Y.—Canned sweet cider is a favorite drink. This is canned in the fall when the cider is first made, by boiling it fifteen minutes and sealing air-tight in glass jars.

A raw egg beaten and added to a pitcher of lemonade makes a pleasant change. A cup of warm water with a dash of milk makes a delicious and healthful substitute for tea and coffee, for those who want a warm drink. A cup of this the first thing in the morning and the last thing before retiring will prevent colds and stomach disorders and improve the complexion.

It is dangerous to put ice in drinks, as typhoid fever is often contracted that way. They should be cooled by placing the ice around them.

M. A. C., Newtown Square, Pa.—Cooling drinks for the meals are very acceptable to persons of sedentary habits, but nothing seems to satisfy the busy man or woman so well as the accustomed hot tea, coffee or cocoa, which seems to have a soothing effect to the nerves, proving restful to the body. Some may say it is only an idea. Even so, the mind has a wonderful influence over the body. I think something like iced tea or iced cocoa is appreciated by most people as a noon beverage when very hot.

For cooling drinks we have found iced lemonade, grape juice, cherry juice, apple juice (all having been canned or bottled the same way), iced tea with lemon, iced cocoa or chocolate to be the best. The iced cocoa is made by mixing in a saucepan three tablespoonfuls of cocoa, four of sugar and one-eighth teaspoonful of salt; gradually add one-half cupful of hot water and cook over the fire until thickened, stirring constantly; add one quart of scalding milk, slowly at first, then beat with the egg beater until smooth; chill with cracked ice and serve with whipped cream or evaporated milk. These are good at meals or night.

Mrs. H. H., Lagrangeville, N. Y.—Needing a large quantity of a cooling drink for a social gathering at my home, and being obliged to "count the cost," the idea occurred to me to try rhubarb juice. I cut in inch length, without peeling, a kettle full of the reddest stalks I could find, and poured boiling water over it to take out the acid, letting this stand ten minutes, then poured water off, adding one cupful of cold water, and boiled this until all could be strained through cheesecloth or a fine wire strainer; sweetened to taste and added water when serving it. This is a delightful, tart, cooling drink. Quart jars of this may be taken on a picnic, set on ice to get thoroughly cold. Raspberry or strawberry juice may be added to give it a pretty color, or the rhubarb juice used as a foundation for punch. In either case the juice of several dozen lemons will be saved in a season.

I am not in favor of serving coffee every day unless there is hired help that really wants it.

Ice tea in summer is an ideal supper drink. If the day is cool cocoa is the ideal drink, for one meal at least, as it is a food and drink both.

The very best way to make coffee is to put the ground coffee in the pot with cold water, about three cupfuls, and bring slowly to the boiling point, then pour in boiling water enough for the family and set on back of stove until needed. In this way all the strength is taken out and it is never better.

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FORT AVENUE AND LAWRENCE STREET

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER I.

She came homing through the wintry blackness, head and shoulders pressing ahead of her steps, her eyes fixed above the dark crowds and the trodden snow on the warmth and shelter and beauty waiting to take her in. The massed shoulders pressed aside to let her through, dirty hands holding out their "Lady, for the love of God—" fell away before the sure aim of her purpose and her oblivion of all else. She went like one who has earned her right to oblivion, acknowledging only the wind. It was heavy with sleet, but she breathed it eagerly, taking it down like a purification for body and spirit. She was turning from the crowds and the slime to the more serene streets, where the snow was still white, when voices spoke at her elbow.

"Well, so long, Mary!"

"So long!" was called back.

As though the summoning word had been spoken, the oblivious spirit sprang to attention. The one they had called Mary was disappearing into the crowds behind, but could still be overtaken. Swiftly and adroitly she followed, keeping the red cap in sight until a delay at a crossing allowed her to get a step ahead and look, as though by chance, into a girl's face, lifted heartily to the storm. The corner lights showed it broad and ruddy, with big, foreign, black eyes. Then the crowd flowed between, bearing them in opposite directions; but the older woman walked slowly now, as though very tired, and her eyes searched the passing faces with an air of old habit.

"Mrs. Jaffrey will be down directly," said Hannah in the tone of patient acceptance she kept for such guests, and, lifting a portiere of heavy black and gold silk, she motioned them into a big and beautiful room, flushed with firelight.

The two girls took the extreme edges of their chairs, but, for all their rigid decorum, they were secretly examining the room as any primitive creature examines a new locality before trusting it sufficiently to relax. Little sniffing noses could not have gauged more thoroughly the substance and value of the dull blacks and dim golds and aged oak, deeply carved, of their surroundings. The room had been built for an ample and luxurious studio, expanding to vast heights, the rest of the apartment being in two stories. Behind the tea table a tall black iron standard upheld a dozen yellow candles in a vaulted row, and the light fell softeningly on the faces, tempering commonness and bringing out the hidden beauty. One girl was small and eager, the other big and handsome and sullen. The latter spoke first.

"Say, Minnie, let's get out. I don't know what you brought me here for.

"Aw, Mame, just wait till you see Mrs. Jaffrey," the other pleaded. "She's so grand and lovely—"

"If she tries to come any adopted mother business on me—"

"She won't" Minnie insisted. "That's just exactly it. She'll be perfectly sweet and friendly, but she don't want to cry over you. She wants to find you a job. Look what she done for me!"

Mame glanced about the big room, her scowl deepening. "What does she do it for? What's there in it for her?"

"Well, you know about her own kid."

"The long lost che-ild," the other interpreted, with a yawn. "I guess that's her picture."

Both turned to an enlarged and tinted photograph that hung beside the chimney. It showed a fair and plump little girl of about two, brown haired and gray eyed, rather a typical, generalized little girl, unless the camera had missed her characterizing traits.

"How did it get lost, anyhow?" Mame asked impatiently.

"Search me. It was before my day. But if your name's Mary, you've got a cinch with Mrs. Jaffrey. Of course, she's nice to any girl—"

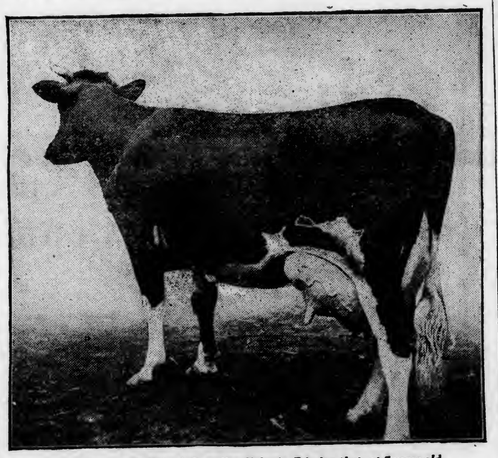
"Sh!" warned Mame, as a shadow crossed the curtained opening above a carved balcony that hung half way up the wall. They were breathlessly silent as quick heels tapped down the stairs and a graceful woman hurried in, fastening a hook at her sleeves, laughing and apologizing.

"I am so sorry! Please forgive me for being late!" She shook hands, adding an extra clasp of her left hand for good measure. "I always am, though I try so hard. It's my Irish grandmother. Perhaps you have Irish grandmothers?" she appealed, turning her lighted face from one to the other.

Minnie admitted it, beaming, but Mame sat dark and unresponsive. Questions brought out only the baldest answers. She had come, but she was not going to let herself be overwhelmed by a fine lady in floating chiffon of embroidered blues and greens, whose hands, moving among the Dresden cups and old English silver of the tea table, looked as though they had never known rougher contacts.

But Mrs. Jaffrey knew her business. Even Mame had at last to open up to her, she was so intelligent, so alive, so whole-heartedly free from any taint of patronage. Her great reason for wanting to come close to them burnt like a white flame back of her every word and look. They could not know how she was spending herself; they saw her as always like this, brimming with some sparkling quality that went to their heads and hearts. When, after unlimited tea and sandwiches, cinnamon toast and cake, they rose to go, she had all she needed of Mame's story, and plans were laid for Mame's future. As she put down the name and address in a book that held many such names, a shadow crossed her face. It left her older; if they had looked up then, they

(Continued on page 228)



Rolo Mercena DeKol. A Canadian Holstein Frisian that, at 5 years old, produced 51.93 lbs. butter in 7 days and 200.34 lbs. butter in 30 days

Selling Horses Right

EARL ROGERS.

A man can soon get the name of being a little crooked in his dealing, no matter what line it may be in, but a farmer who sells a horse for something that it isn't, gets it a little quicker than in anything else, I believe.

I am not so very old but I have learned, I think, to buy horses, and other stock as well, as close to my farm as possible. One has to take the word of the other fellow more or less in any dealing, but in buying where I can see the animals before I want them I avoid a good deal of loss.

There are some men in our country who wouldn't tell you anything but the truth about a horse if you were buying. These are the ones I like to deal with. They might not have exactly the animal I want, and the price might be a little higher than I care to pay, but even at that I feel that I have made a saving, because there is no risk. I am not a good horseman, either as to expert care or in seeing the many points of an animal. This is probably why I like to be sure of the horse I am investing in. I have bought horses far away and been skinned very nicely. That was before I saw that it was foolish. I refused to buy a young mare for $140 once, that suited me pretty well, because it was a little small. I knew she was right. But I waited for something cheaper and finally paid $150 for one that was a fine looker but kicked in the front end of a rig enough to bring her cost price up $25. I sold her for $20 less than I paid, and still I didn't know enough to buy closer to home.

I went about fifteen miles to see a driving horse that looked like a bargain, and bought him. He ran away and strung out a rig that cost me about $10 to repair. Then I started to wake up and the next horse cost $225, and it was a lot safer, because she was on the next farm at work most of the time and I knew what she was. She is still on the home farm and was worth buying because she was always worth keeping. I do not buy horses to sell again, but to use and wear out. If I did, perhaps I'd like the "take a chance" method of dealing.

I sold both these horses for what they were. I have sold some others that way, too, that were not just what they looked to be. Few buyers would have suspected anything, either. Yet every one of those men who bought would come after another horse and know that it would be what I said. I meet some of those men every few weeks and I can look at them square. One horse was sold to a mail man. He knew that she kicked and how she was acting. He took the chance on her and won out. He sold her for about $50 more than I got from him. But he had time to monkey with her and I had a farm to take my time.

I could have made quite a few dollars on any of these deals by keeping still and letting the buyer wake up some time when he had landed against a 'phone pole or in a convenient ditch, but would it have been worth while? I don't believe it would. I know it don't pay any farmer to sell anything for something better than it will prove to be. The fact that a farmer sells for what the animal is seems to be sufficient to bring the purchaser back to him again. He may put the price a little too high, but usually a reasonable price goes with the reasonable description.

A farmer usually has to live in a neighborhood for a long time. It certainly pays to be known as a salesman who can and will tell all the truth. There are farmers who will be absolutely honest in any deal outside of a horse sale, but I believe they ought to be honest there, too. It'll pay dividends. *Ohio.*

Careful breeding records made at this time of year will lessen the stockman's responsibility at calving or foaling time a few months hence. The dam's name and herd number, the sire's name, and the date of service should be recorded the same day the female is bred.

Unless the price of butter is two and one-half times that of cheese, it is better to make the milk into cheese.

The milk scales and the Babcock tester ought to point the finger of doom to the merely average cow.

That wonderful old brood sow,
She's making for me money now,
Out there in the pen
She's raising all ten
She's worth more'n any old cow.

After Patsy Hogan had left Dublin for the country, and rented a cottage with a small backyard, he returned to town and purchased a monkey. Not a word of his scheme would he disclose to his old cronies.

But afterwards he explained. 'Twas like this: I chained the monkey to a stick in me yard, and the coal thrains were passin' all day, and on iv'ry train there was a stoker. In one week I had two tons of coal in me cellar, and the monkey was never wanst hit!—London Tit Bits.

Watch Your Pastures

Now is the time to look over the permanent pastures and see how they are standing the grazing and hot weather. It is too late to fertilize or re-seed, but it is not too late to remove the stock from the pasture which may be grazed too close or where the vegetation may be dying out. Give the grasses a chance to recover if necessary.

If it is too early to pasture newly cut meadows, an early soiling crop of oats and field peas, or some summer ensilage, would make a good substitute.

If parts of the pasture do die out, remember next spring, as the frost is coming out of the ground, to re-seed lightly with a mixture of equal parts of timothy, Kentucky blue grass, Canada blue grass, red top, English rye grass, and white clover. Later a very light application of lime and a complete fertilizer may pay in the long run, say specialists at the Pennsylvania State College.

In some parts of the state a bright orange color flowered weed is taking possession of the pastures. This weed is commonly known as Orange Hawk Weed or Devil's Paint Brush. The rosettes of fuzzy leaves spread like a mat over the ground and single stems with a cluster of reddish orange flowers grow up from each rosette. It spreads persistently by means of seeds like dandelion and underground stems like quack grass.

If this weed is found in abundance one might as well start at once to plow it under and sow a grain or intertilled crop. It is readily controlled in this way. Buckwheat is a crop well suited to most pasture lands.

Hot-Weather Rules

1 Load lightly and drive slowly.

2 Stop in the shade if possible.

3 A sponge on top of the head, or even a cloth, is good if kept wet. If dry it is worse than nothing.

4 Water your horse as often as possible. So long as a horse is working, water in small quantities will not hurt him. But let him drink only a few swallows if he is going to stand still.

5 When he comes in after work, sponge off the harness marks and sweat, his eyes, his nose and mouth, and the dock. Wash his feet but not his legs.

6 If the thermometer is 75 degrees or higher, wipe him all over with a damp sponge, using vinegar water if possible. Do not wash the horse at night.

7 Saturday night, give a bran mash, lukewarm; and add a tablespoonful of saltpetre.

8 Watch your horse. If he stops sweating suddenly, or if he breathes short and quick, or if his ears droop, or if he stands with his legs braced sideways, he is in danger of a heat or sun stroke and needs attention at once.

9 If the horse is overcome by heat, get him into the shade, remove harness and bridle, wash out his mouth, sponge him all over, shower his legs, and give him two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre, in a pint of water; or give him a pint of warm coffee. Cool his head at once, using cold water, or, if necessary, chopped ice, wrapped in a cloth.

10 If the horse is off his feed, try him with two quarts of oats mixed with bran, and a little water; and add a little salt or sugar. Or give him oatmeal gruel or barley water to drink.

11 Clean your horse at night, so that he can rest well, and clean him thoroughly. The salt dandruff drying on his skin makes him uncomfortable, and often produces sores under the harness.

12 Do not fail to water him at night after he has eaten his hay. If you don't he will be thirsty all night.

13 If it is so hot that the horse sweats in the stable at night, tie him outside, with bedding under him. Unless he cools off during the night, he cannot well stand the next day's heat.

Are Your Cows Paying?

Butter fat has doubled in price in the last three years.

Feed has doubled in price in practically the same length of time.

It is therefore imperative that the man who markets his cream must know that each cow into which he puts feed will return him her board bill, the price of his labor and a margin of profit. The only way to know that a cow is worth milking is to test.

The weight sheet, a record of the pounds of milk given daily by each cow, should be kept. The Babcock test for butter fat should be run for two days each month. The fat test for that length of time, together with the average daily weight of milk given, will determine the yearly fat production.

Breeders of pure-bred dairy stock have long recognized the importance of the milk test. Advanced registry records for the various breeds set standards of production and the cows that can reach such standards more than double their value for themselves and offspring as well.

The weighing and testing of milk is not yet practiced by the general farmer. It will be, however, as soon as the farmer realizes that only in this way can he know the profitable cow to keep and whether his herd is improving or deteriorating.

A farmer milking ten cows of which only one was a high producer would double or even treble his net profits in a year by selling the nine and milking just that one.

One case is on record of a cow that sold for $150. The purchaser tested her and her butter-fat record made her worth $1500 at her next sale.

Test your cows and know whether they are eating up your profits as well as your feed.

Vegetable Growers' Convention

The Vegetables Growers' Association of America will hold its twelfth annual convention at Columbus, Ohio, August 25th to 28th inclusive.

This organization is made up of some of the most progressive gardeners in the United States and Canada. A good program has been arranged which will include side trips and entertainment. There will also be a trade exhibit held in connection with the meeting. Both will be held in the Horticultural Building of the Ohio State University; headquarters will be at the Southern Hotel.

Any gardeners who can possibly get away from home for this meeting will find it well worth their while. It combines an opportunity to have a brief vacation with a period of contact with co-workers and a chance to get posted on the latest developments along various lines affecting the industry.

Anyone wishing to reserve rooms in a private home should write Professor L. M. Montgomery, Ohio State University, Columbus, Ohio, and those wishing to receive a copy of the program should write Samuel W. Severance, Sec'y, Louisville, Ky., care of the Market Growers' Journal. Anyone interested in making a trade exhibit should write C. W. Waid, East Lansing, Michigan.

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Blue Buckle "Buddies" for children 4 to 16 years duplicate the men's garments in quality, pattern and workmanship. They're the best wearing play-garment sold in America.

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Know what Blue Buckles give in work-comfort. Next overalls you buy, make 'em Blue Buckles!

Ask your dealer for Blue Buckles

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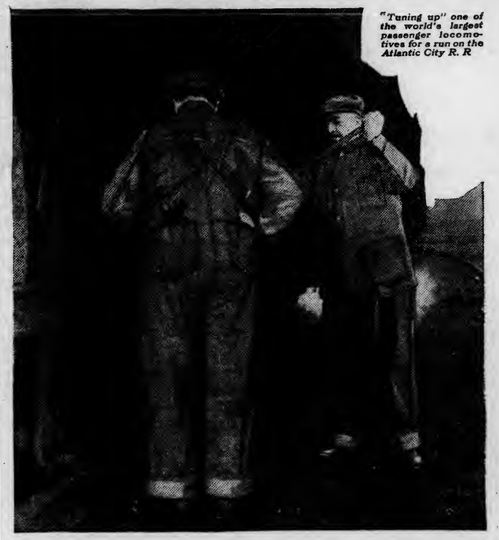

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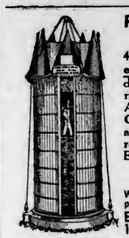

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FOR SALE Registered boar pigs old enough for service, $40, sent on approval, also sows. Immunized.

HARRY W. VAIL, NEW MILFORD, ORANGE CO., N. Y.

A Girl Named Mary

(Continued from page 226)

would have seen the threads of sharp silver in the dark curve of her hair, a momentary sinking of the muscles under her clear pallor, a lowering of the inner life. The Irish grandmother had bequeathed to her very blue eyes, about which the black eyelashes pricked out with a pleasing distinctness. The features were not classic—indeed, the nose had an odd little dent; and only a sophisticated taste would have found the face beautiful. The girls could not have told why their eyes had been drawn so persistently. She turned from them to the fire, resting a hand on the mantlepiece and a slipper against the andiron.

"I hope you will feel that I am a friend," she said. "I once had a little girl named Mary—perhaps you know about it." Their awkward silence answered. "Then you understand why I care about every girl who has that name. If either of you ever want help, any kind of help that an older woman can give, you will find me here and ready. This is not words. Girls have come, often and often, and sometimes I could help. It is worth remembering." She took Mame's hand warmly into hers. "Anything," she repeated. "Day or night. There isn't a girl on earth with your name that hasn't a right to anything I can give her."

"I wish you'd do something right now," Minnie ventured.

"Yes, Minnie!"

"Won't you sing for Mame?"

"Of course I will!" She went gladly to the piano and struck familiar chords. "You might join in on the chorus," she suggested. "People don't sing half enough—it feels so good down in your diaphragm."

Their laugh was startled, gratified; they had not expected her to know about vulgar things like feelings down in the diaphragm. She sang *Massa's in de Cold, Cold Ground*, in a deep, sweet voice that made Minnie cry, and then, by request, such popular favorites as *Only Lonely*, and *Dearie, Good Night*. Mame had the audacity to ask for *Jim Jam John*, earning a reproachful kick from Minnie, but Mrs. Jaffrey did not seem shocked.

"No. Is that a good one?" she said, and made a note of the name. The glow of their good time was in their faces when at last she summoned the elevator for them and smiled them off from her doorway.

"Gee, but I'd like to help her," Minnie said, as the elevator slid down with them.

Mrs. Jaffrey had dropped on a couch, letting her arm fall across her eyes. She lay exhaustedly flat, and her attitude imposed a reluctant silence on the middle-aged maid who came to take away the tea things. The latter's need of spech jerked down her jaw half a dozen times, but not until she had no excuse left for lingering did she venture it.

"I beg pardon, m'am—did you say there'd be just a gentleman for dinner? No ladies?"

The concealing arm did not stir. "No one but Mr. Le Baron," was the tranquil answer.

Hannah struggled visibly while her well trained feet took her inexorably to the door. There her protest made a last stand.

"You weren't thinking of calling up Mrs. Osborne, m'am? She'd likely be alone tonight."

"No, Hannah." The words were expressionless, but after Hannah had made a sighing exit, a smile came out at Mrs. Jaffrey's lips, spreading up in the direction of her hidden eyes. It still lurked there when, a little later, she rose to greet her guest.

He took it as some dim amusement at him, and his answering smile welcomed her to all his foibles if they could give her a moment's enjoyment. Ladies always laughed at Hugh Le Baron, or scolded him, or tried to make him over, and his good heart took it genially, even while his excitable nerves and mocking brain prepared fresh trouble.

"Well, Marise!" His face—a nervous, mobile face, overlined for his forty-odd years—broke out all over in smiles, as though it were very good to be with her. He drew up a chair beside the couch, its back to the world. "You were lying down," he declared. "Must you sit up, just for me?"

"For Hannah," she corrected him. They smiled over Hannah.

"Tired?"

"Pleasantly!" They smiled over that, too. It had been her father's word when he came home late from his big law office and his complicated affairs. That was the precious thing about a friendship begun in youth—a word could bring back so much to both.

"I suppose you've been spending yourself, body and soul, on the proletariat," he objected.

"You may call it that. I don't."

"I know." Hugh spoke with rising irritation. "You call it my brother the barkeep and my sister the pants finisher. It's the cult of Saint Francis gone mad."

Her head dropped back. "Oh, be good, Hugh," she murmured.

That set him off. "Good! When you say, 'Be good,' you mean, 'Be brainless.' Women want indiscriminate applause for everything they do. If your idea of companionship is two down cushions before a register—"

Her laugh interrupted. It was a lovable sound, and it magically wiped out his rising scorn, turning him into a good little man, happy that he had given her amusement.

"You do spend yourself, you know," he said mildly.

"I know it," she admitted. "When I talk I seem to use all my bodily organs. I can't learn to do it just with my mind. It takes more out of me than any work I have ever done."

"Who were here?" he asked.

"Only a couple of girls. One of them I rescued from a night court, a year ago, and she wanted to bring a friend who was headed the same way. Nice girls, really—just needing a friendly hand at the right minute." She told him about her guests, tranquilly refusing to see that he frowned and jerked in his chair. When she stopped, his comment—a great deal of comment—was kept in by sheer physical violence.

"Well—you were very kind to spare the evening for me," was all he permitted to escape, as Hannah announced dinner.

Mrs. Jaffrey rose, smiling down into his dark face. "Hughie, when you were six, you must have been the naughtiest little boy in the world," she said. "How did your mother ever cope with you?" Women were often reminded of Hugh Le Baron's childhood; perhaps that was one reason they were fond of him, and forgave him much. The face of the small boy—the impish, pretty, black-eyed little scamp—still lurked somewhere behind the worn, experienced face of the man. Marise had a glimpse of it now as he smiled back.

"I worshipped her," he explained. "Ladies can do anything with me when I worship them, Marise."

She was cased, as always, in an impenetrable pleasantness. "Come to dinner," she said. "Hannah wanted me to call up Luly, but as you openly and visibly don't worship her, I refused."

"Thank God," he sighed. "Why you have had that trained white slug under foot all these years—"

"Oh, Luly was very useful," she interposed. "And, while I was younger, some sort of chaperon was necessary. She left me freer."

"She was a fat slug. And she was everlastingly *there*, with her fat white knitting. No one ever asked her out, and she never had the sense to go to bed. Do you realize that in all these years and years, this is the first time I have ever dined alone with you?" He asked it with aggrieved intensity, but he could win no response.

"I hope it won't be the last time," was the tranquil answer. It struck from him a quick glance and a note of startled laughter, but, if a warning had been intended, her amiable face gave no sign. And the words, of course, might have meant just what they said. He gave it up with a sigh of impatient helplessness.

"You could have found some one more attractive—but you don't care," he said sadly. "You haven't any heart, Marise; you're as impersonal as nature. You know differences—you knew that Luly Osborne was a deadly bore; but if a merciful heaven hadn't removed her daughter-in-law, and so made her necessary somewhere else, she would have been here to the end. Knitting. You would never have lifted a finger."

"My dear Hugh, for sixteen years I haven't cared what any one was or did, so long as they did not come between me and—my business." Her voice dropped over the last words, as though she were mortally tired.

He turned gentle at once. All through dinner he diverted and took care of her, so selfishly and with so pungent a humor that her look of exhaustion was soon laughed away. It was pleasant to be amusing for Marise, because in years of intense preoccupation she had forgotten about jokes, and her appreciation had a startled quality that was very flattering. Hugh was touchingly pleased with his success. A tragedy gallantly borne confers a subtle rank, and all Marise's world treated her a little like royalty, though they were as unconscious of this as she was. They brought their devotion to her, and did not dream of questioning the fact that she never sought them.

"Now hasn't it been nicer with no Luly Osborne?" he insisted when Hannah had brought their coffee. "Haven't you noticed a difference?"

She considered. "I have noticed that you behaved better," she said. "With Luly, I have sometimes thought that you were a little—well, shall we say abrupt?"

"Say a rude beast, if you'd rather."

"Oh, not for worlds!" protested Marise politely.

He laughed, wholly happy to have her make fun of him. "I know I'm a snob," he confessed. "Intellectually, at least. I don't mind a dowdy body, but I hate to be in the same room with a dowdy brain. Cigarette?" he added, offering his case; but he looked surprised when she took one. "I never saw you do this before," he said, bringing her a light. "Was that Luly, too?"

Hannah was in the room for fingerbowls and candies, and Marise did not answer until they were alone. Then she took out her cigarette and looked at it thoughtfully.

"I can't endure them," she said, "but I have to take one once in a while, to keep Hannah in order."

"Hannah!" His surprised laugh carried the word so high that she had to put up a warning hand. "I have heard of tobacco for rose bugs, but I never heard of it for housemaids," he protested, dropping his voice.

"You never knew my Aunt Ellen's Maggie," Marise began.

"Oh, didn't I!" he broke in. "She took a dislike to me, and so they had to stop asking me to the house. Your Aunt Ellen explained it with tears in her eyes—that Maggie was so cold to them after my visits that they would have to give them up."

Marise was laughing. Maggie had been a family trial in her day, but twenty years had turned her into a joyous memory.

"How she terrorized them! I remember how nervous they all were if they went home late to a meal. She was the perfect servant grown into a perfect tyrant—too valuable to be given up, and too devoted to be wounded. Well, Hannah is made of exactly the same material. She would absolutely run me and all my affairs if I had not a firm hand with her. I was warned in time, you see. So I take a cigarette now and then as a matter of discipline—she nearly bursts with disapproval." Marise replaced the cigarette for a long breath, then again considered it. "I wonder if I haven't done enough?" she murmured, with a frown of distaste.

He came and took it from her. "I'll finish it for you," he said, deeply amused. "There—Hannah will find only a stub. May I take mine into the other room?"

They turned back to the fire, strolling harmoniously. The evening might have been as pleasantly unmomentous as dinner but for an unlucky bit of paper. It had drifted from the piano, and as hugh picked it up, its words caught his eyes. He brought out eyeglasses to make sure that he had not misread them.

"'Jim Jam John,'" he repeated. "Is that a private code? Or something to eat?"

"It is a song I want to get." Storm signals flew at once, but she placidly went on, neither defying nor propitiating him. "A girl this afternoon spoke of it. Don't lose that—unless you are going to be so very good as to send the song up to me."

He replaced the slip on the piano and weighted it down with an ivory elephant. "I am not," he explained emphatically. "When you try to pretend that the cheap and vulgar songs of cheap and vulgar shows have anything in them for you—"

"Hugh, listen to me," she broke in, without heat, but firmly. "When I used to sing *Hey Diddle Diddle* and *The Three Little Kittens* to my baby, I was not pretending that it meant very much to me; I was only making her happy. And, because it did, it made me happy. Can't you see?"

"But those are classics," he triumphed. "You didn't sing her *Goo Goo Girlie* and—ach!—I can't name them in your presence." He flapped over the music on the piano and pushed it from him. "Can't you see that you don't change yourself by a hair's breadth? All this wallowing in the proletariat—it hasn't rubbed off on your speech. Look at yourself!" His gesture took in all her harmonious presence, the big curve of her dark hair, the fine hands and the floating embroideries of her quaint, loose gown. "Just look."

She obeyed with an impersonal interest. "I could give up pretty clothes—oh, so easily!" she said. "I have thought of it, you know—taking up a sort of uniform, perhaps a serge suit and a crepe blouse for everything." He shuddered, but she did not notice. "I think it would be a mistake, though. Pretty things appeal to girls. They help to open the door between us. And Hannah freshens them so that they last ages. I am not really extravagant. This is a Paquin gown, but I have worn it for three years."

His rapid headshake took clothes out of the question. "It is not a matter of externals, it's the inner fact. You can't sell your birthright, Marie Louise, you can't escape it. You are hopelessly and forever a lady. Why pretend?"

He could not reach her. She was only patient. "Hughie, first of all I am a mother, the mother of a girl named Mary who, if she is still living, is perhaps in this very city. I have a girl named Mary who doesn't know about me, who must have grown up in common ways, perhaps in vice and dreadfulness. I owe that girl what she was born to. I am not sentimental now. In her little girl years I just longed like any mother to get her back in my arms. Now, if she is living, she is nearly nineteen—oh, there is not one thing I haven't faced! And not one thing I can't face, if I can find her."

He was horribly moved, but tried to scowl denial. "You can face it in theory—yes."

"I can face it in fact, if it comes. I shall keep close to the things that working girls like. Nothing must be alien to me, nothing must shock or repel me. It is my life job—to keep myself wide open. Can't you accept that and stop fighting me?"

(To be continued)

As you plant, so you reap.

M S McDowell
Penna State College
Solox

The Practical Farmer

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To Make the Farm Home Really "Homey"

(Our women readers give their ideas on this subject in the prize-winning letters on this and following pages)

PRIZE LETTER

Keep it Cool in Summer

MRS. E. M. ANDERSON.

NOTHING is less "homey" about now, with the thermometer hovering around 90 in the shade, than a sweltering hot oven of a house, and it is a special abomination that I try hard to avoid. Very little money can go into any plan to keep cool, but I have a most excellent 4-burner oil stove with a good oven, and we usually make a hay box, though we haven't put it together yet this season. It is one thing that need not cost a cent except for depreciation on utensils, and our utensils consist of three enameled pails with tight covers. Aluminum would be preferable and I hope to have them some day, but we have used these for several years. We pack the box very tightly with hay three or four inches deep, arrange the pails on this packing in the position in which we want them to stand, pack hay firmly around them until each has a snug and compact nest from which it is easily removed and replaced, and pack a bran sack rather loosely with hay for a cover. A board cover, of course, goes over the whole and when it is pressed down the hay in the sack packs tightly and assumes the shape of the box. It boils or stews just as perfectly as any commercial fireless cooker, and better than many. Of course, it neither fries nor bakes, though people claim they are easily fitted with soapstones and made to do both. I have not tried it, but I don't know why it might not work. We usually line the box with several thicknesses of newspaper before packing with hay. Sheet asbestos might be better, though some people say newspapers are superior—they are certainly cheaper.

I buy the wire screen cloth and tack it securely to my window frames, so that the sash may be

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PRIZE LETTER

Keep it Warm in Winter

MRS. M. E. HEISER.

THE question of home-making has many angles. The home does not mean merely a place in which to live. Neither does it mean a house filled with expensive furnishings, if it does not provide contentment to the occupants, and who can be content if not comfortable? Therefore comfort must be the first essential to "home" making in the true sense of the word.

Of course, during the spring and summer months the tendency is to spend as much time as is possible in the open, but it is during the fall and winter, when we are compelled to remain indoors, that we must have comfort, and no one can be comfortable in winter without efficient heating equipment; thus it will be seen that we must give our attention to providing heat in the most efficient and economical manner.

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Picturesque—and that's all! No "Happy Home" in this sort of thing!!

PRIZE LETTER

Let in Air and Sunshine

C. J. LUPTON

IN order to have home "homey," do not shut one room up to keep for funerals and weddings. They do not come very often in most families, but we do want to live and be happy every day.

First, let all of God's good sunshine and out of door air in, through doors and windows. What if that eternal shining of the sun does fade some things; it is easier to get a new rug than health and optimism.

Last night we had a thunder shower and it was necessary to have all the windows closed, even the bed room ones for a time, but this morning I have them all open—thirty-one windows—from the third story to the cellar. I have fancy weights to hold open doors which might slam, and I have a variety of paper weights to be placed on anything inclined to be disarranged by the wind.

I believe in a place for everything and everything in its place, but not to the extent of making everybody miserable. I try to have each member of the family put their belongings in the proper place, but if I fail to accomplish it then I do it myself.

I have a one-pipe heater and water in the kitchen, and electric lights will be the next help to "Easy street."

But home is where the heart is, and it is not always the things that money can buy which makes home homey. It is a unity of interest, optimism and knowing that we make our own happiness in our hearts by the way we see things. If you think the world is all out of joint, look well within and see if the trouble is not close at home.

I believe in the profuse use of paint, an abundance of shrubbery and being buried in flowers

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PRIZE LETTER

Making the Front Yard a Joy

MRS. BYRON CROSBY.

SEVERAL years ago I had no place to entertain my summer callers, except a small, stuffy parlor, a dark living room that had to do duty in summer as dining room, or a hot kitchen. These rooms all looked out on a large front yard overgrown with rank grass and weeds, and made more unsightly by hummocks and holes. The steps to the house were so narrow the caller had to step down after knocking, or be scraped off by the screen door.

I admired the lawns in town and envied their owners, and kept suggesting that we have a lawn mower. My husband would laugh and say, "Could not use it if you had one; too rough." My young son visited a friend and was fascinated with their lawn mower. His continuous talk of lawns and lawn mowers finally bore fruit and now my "front yard" is admired by all callers from far or near. One school principal from a western city said, "I would give one thousand dollars if I could transplant this yard, just as it is, to my own home." And an English lady from Pittsburgh remarked, "I love to sit in your beautiful field." My yard is 50 by 100 feet, and slopes north from the house to the public road. It is bounded on the west by a neighbor's cow pasture and two lovely maples fifty years old. On the east is the drive.

The line fence was an ugly thing of rotting boards and leaning posts, the interstices full of milk weeds and burdocks. My husband cleaned this out and put in woven wire fencing with one barb wire along the top to keep the cattle from reaching over to nip our shrubs.

There was now a long line of newly grubbed soil along this new fence, and my son and I went to a neighbor's and obtained roots and young shrubs to plant there—lilac, spiræa, iris, pæonies, yucca and perennial phlox.

The hummocks on the lawn were the remains of old stumps of cherry and plum trees that some former owner had planted in front of the house. These places were leveled with a mattock and sprinkled with grass seed. The hollows were filled in with stones from the garden, and some dirt wheeled on and seeded.

Along the drive are catalpa and flowering currant and an old-fashioned thousand-leaf rose. The mowing was not an easy job the first year, on account of so much coarse, heavy grass. But each year improved the sward and where it was grubbed over, the white clover has filled in and made a fine, soft lawn.

There is no porch. The wooden steps became dangerous. These were replaced by cement, and the upper step was made a large platform on which a caller may stand at ease while the housewife swings open the screen.

Our cellar is very cold in winter and the walls of the house have to be banked with leaves or sawdust. I thought I could not have any plants by the wall—the banking would smother them. But I find that columbine, snow on the mountain, golden glow and a pretty shrub having white, waxy berries in the fall, flourish nicely in spite of being covered five months in the year.

Some energetic farm wife is going to say, "Why all this fuss; why didn't that man put a porch on the house and plow and grade the yard?" There are several answers. We are renters. On account of the immense maples on the west and north of the yard, only a small portion could be plowed. It would require time and money to draw in dirt and grade without plowing. The children and I were not taking time from duty nor money from the farm budget by spending an hour or so daily in beautifying the spot where our lives were cast for a season. We made our home more "homey" and brought pleasure to those who called on or visited us in summer.

New York.

PRIZE LETTER

A Back-yard Bower

MRS. CAL HOFFMAN.

THERE are ways and means without number to make home homey, but a way that looms large, is the care given the back yard. No matter how large or how small the plat, the condition in which it is kept gives one either a feeling of pleasure or disgust. Not long ago I called on an intimate friend of mine, who is very stylish with her house and personal appearance. Upon ringing the bell there was no answer, so I went to the back door. Oh, horrors, such a sight! Tin cans, old bottles, old shoes, potato parings—in fact, everything but a horse and cow. The majority of farmers' wives spend the greater part of their lives at their back door, so why not have it pleasant and restful. I have my front lawn perfectly plain, but my back one is a mass of bloom from spring until fall—narcissus, tulips, pansies, lilies of the valley, roses, snapdragons, gladiolus, asters, dahlias and "mums." A lady said to me recently, "Oh, why don't you have these beauties out front where people can see them?" I replied, "That is just why I have them back here; my home folks are people and we get so much of life from the beauty of the flowers as we go about our daily tasks, that I wouldn't have them elsewhere."

Pennsylvania.

Too many farmers overlook the garden as a factor in making home "homey." Nothing like fresh "green stuff" to keep the family healthy.

PRIZE LETTER

A Practical Idea Often Overlooked

MRS. H. C. ROSE.

ONE of the best ways to make a home homier, or a pleasant place to live, I find is to have the love of God shed abroad in our hearts. Then every little thing which comes up will not vex us. There may be real hard places or trials come up in my life (and they do come), but Jesus always makes them lighter. When we have the love of God in our hearts we will not find fault so easily, and can find excuses for our brothers' or sisters' faults. In this way we are always ready to help lighten the burdens of others and lend a helping hand wherever needed. I find through the grace of God it is an easy matter to forgive others for wrongs they have done me, and to do good to those who have done otherwise toward me.

There is no doubt that keeping sweet and pleasant will make life pleasanter to those around us. If we are continually watching for the good in oth-

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PRIZE LETTER

Tightening the Home Ties

MRS. LELIA DAVIS.

THE farm mother can be a marked factor in keeping her son satisfied in many ways, but none of them is more important than providing the boy with a room he can really call his own—a sort of inner sanctum—and creating an atmosphere that warms his heart. My own experience with children leads me to believe that the greater the interest a child has in the home, the less likely is he to wander away. Of course, the tastes of boys are not the same, hence in fixing up a boy's room, the personality and individuality of a child must be taken into consideration. No one can tell better how to please him than his mother, who understands him best, but even she can learn a good deal more by studied observation.

The color scheme should be in keeping with the boy's desires, whether it be anyone's else or not. Remember, it is his room; it is being arranged for his pleasure. Naturally, all mothers are desirous of keeping the boy's room spick and span, with everything in its place, but very often that is carried too far. The boy sometimes feels that his rights are being encroached upon if any of his treasures are carried out or misplaced, hence let him have some freedom in this respect. Let him fill his room with things that are dear to every boy's heart. Clean it thoroughly—yes, but allow everything to remain just as he placed it.

Every boy has a hobby of some kind. If it be photography, for instance, don't chide the youngster because he clutters the room up with things photographic. Rather encourage him in his hobby; as long as his mind is occupied with his hobbies, it won't be filled with desires to wander off to the city.

I have known a number of mothers who did not like their children to take their chums to their rooms. I believe that to be one of the worst mistakes a mother can make. Give the boy to understand that his chums are welcome at any and all times.

In short, make the home life of the boy so pleasant that he will have no desire to leave, and even if he should get the wanderlust, the reception he receives among strangers will probably work such a contrast in his mind that his footsteps will naturally lead him back home.

Virginia.

PRIZE LETTER

Keeping the Minds Well Fed

BELLE BARKER.

A GREAT deal of sickness and other reverses have made it impossible for us to have all the home comforts we would like, but next to wholesome food for the stomach, we try to have wholesome food for the mind in the shape of good literature, though we have to make over a hat for several seasons, wear a gown that is out of style and clothes that do not look as new as they once did. What is put on the outside of the head must be taken off; what is put inside will endure while life lasts if we will to have it so. We take a daily and local newspaper and several good farm papers and magazines. We do not try to take so many that we can only skim through them, but only enough so that we can read them thoroughly. We have made a practice of exchanging books as gifts, until we have a small library, with what other friends have given us. I had a chance to buy a set of Stoddard's Lectures of Travel, twelve volumes, at a very low price, and we have enjoyed them immensely. They are also very instructive for young or old.

New York.

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AUGUST 1, 1920

WHETHER we live on the farm, in the country village or in the crowded, rushing city, there's nothing so comforting to the tired body and the confused mind as to come in at the end of the day's work to a really "homey" home.

And so this "Homemakers' Number" of our paper, while it may seem on the face of it to be a "woman's number," is really of vital importance to every man and child whose home it reaches, as well as to the women of the family. For in it are revealed some of the secrets of the Happy Home.

In all the prize winning letters published in this issue (and others which will be printed in the August 15th issue—for the good ones were too many for the space available in this paper) the dominant notes are cheerfulness, cleanliness, bodily comfort and efficiency in housework. And we like to put cheerfulness first—for without it no home can be really happy, no matter how comfortable it may be or how well fed and clothed its inmates are.

Flowers, shrubbery, green lawns, bright, clean wallpaper, plenty of fresh air and sunshine, music, hospitality, and above all, "the love of God shed abroad in our hearts," as one woman puts it—these are not the extras, the fancy touches, that some housewives seem to think them. They are the *necessities* if home is to be really "homey"—the best loved spot on earth—the tie that binds the brood to all that's good and holy. We hear a lot about "the pies that mother used to make," but it isn't bread and pies and cake that bring tears to our eyes when we think of our childhood's home; no, it's the love and good cheer and brightness and beauty that abounded there that we're remembering, and will fondly remember as long as we live. And if the memory of home brings no tear or quickened pulse it's because these things of the sentiment—these "niceties"—*didn't* exist there—not because we were not well fed and comfortably clothed. Isn't that true?

You'll find suggestions in these prize letters as to heat for cold days and coolness for warm days, healthful and appetizing cooking, running water, electric lights, and schemes for making housework lighter; these are what are usually called "practical" things, and will be read with interest—and they are valuable and will be found helpful. But don't skip the letters you may feel inclined to call sentimental or impractical if you are really looking for suggestions that will help you to make your home "homier." Yes, we commend *all* the prize letters to you—read them carefully,

The Good Crop Outlook

THE July crop reports for Pennsylvania and New Jersey are certainly most encouraging and show how well the favorable weather conditions of the last few weeks have come to the farmers' rescue. The present estimates do not indicate that last year's record will be quite reached in most cases, but the yields generally compare very favorably with the ten-year average. With a continuation of present conditions, the August reports will show further improvement and may place several crops ahead of last year's record in spite of a reduced acreage of planting. Indeed, New Jersey is already beyond last year's mark in potatoes and hay. The outlook for corn and tobacco is particularly gratifying in view of the late date at which a large proportion of these crops went into the ground. We recently saw some tobacco which did not go in until after the Fourth, and which is coming along nicely.

In the face of all the perplexities and difficulties with which the farmer has to contend there is much that is hopeful and consoling in the present prospects, particularly as the general level of food prices is bound to be high next fall and winter.

Are Prices Receding?

WE'VE been hearing a lot during the past few months about a beginning having been made in the permanent decline of prices. A great merchant, with stores here in Philadelphia and New York, laid claim to the honor of having broken—or at least sprained—the back of the H. C. of L. by inaugurating a 20 per cent. discount sale on his entire stock, in which laudable example he was followed by big stores throughout the length and breadth of the country. But this great merchant's sale has ended, and so have those of most of his imitators' and prices don't seem to be on a material, if any, lower level. The merchants quickened business when it was lagging sadly, and the public has indulged in an orgy of extravagance which it could ill afford, has bought in quantity goods which it would never have thought of buying at ordinary prices, simply because they seemed cheap, and has stored away in bureau drawers and attics goods on which the market was already short.

Until production much more nearly overtakes consumption than it does now we cannot see how the high cost of living can be permanently reduced. Either we must increase production or decrease consumption—or better still, both. Price cutting that only stimulates extravagance in consumption can not only do no permanent good, but must in the end do harm.

We are wont to hear the labor agitator shout for "an honest day's pay for an honest day's work," but the truth of the matter is labor as a whole isn't willing to give an honest day's labor now-a-days. At the exorbitant wage of today production per man per day doesn't begin to be what it was at the normal wage of half a dozen years ago—and that's why production is so short. On the other hand the possession of such fat pay envelopes, with plenty of spare time in which to spend their contents, have led to extravagances which have increased consumption beyond all records.

The situation was typified a few weeks ago when the Editor saw, at one of these "H. C. of L. busting sales," an Italian laborer buy eleven silk shirts at $5.95 each ("reduced from $12")! So long as this remains typical don't expect any "permanent disability" to attack old man H. C. L.! He's hale and hearty yet!!

Farmers' Markets

FARMERS' retail curb markets offer the best solution of the marketing problems under many different conditions.

This plan is particularly profitable for both the farmer and the consumer in places where the retail dealer insists on an unreasonable profit.

The New Jersey Bureau of Markets relates an instance of where a dealer insisted on maintaining the early season price on peas, of 30 cents a quarter peck, even when the increased supply had brought the wholesale prices down to $2 a bushel. Indeed, so anxious was he to secure big profits that he offered a farmer $1.50 a bushel for a load of peas, with the result that the farmer in his indignation peddled them out himself and disposed of the entire 20 bushels in three hours at 25 cents a half peck.

High prices reduce the volume of sales, the supply is not moved quickly and accumulates, forcing down the prices the grower gets. It takes large sales with reasonable profits to keep things moving. In places where the small-sales-with-big-profit policy is pursued the farmer must in self defense do business with the consumer direct.

Higher Freight Rates

THE decision of the Interstate Commerce Commission on the application of the railroads for increased rates is expected soon. Although the higher wage scale which has just been granted to the railroad employes had been anticipated, this brings home a realization of the fact that more revenue is necessary with which to meet this and other increasing expenses, and we must expect to pay a higher freight and probably a higher passenger rate.

Much has been said about not advancing the rates on cattle, wheat and other food materials in proportion to advances on other traffic. It is true that the full carloads and long hauls incident to such shipments produce comparatively high ton-mile earnings, and this fact should be, and undoubtedly will be, taken into consideration by the Commission. In all other respects we believe that granting special concessions in favor of certain commodities, interests or localities amount to discrimination, which is sure sooner or later to react most unfavorably.

We must not lose sight of the fact that the consumer ultimately "pays the freight" just as he pays all other costs. If freight rates on things raised on our farms are increased, it just adds so much to the cost of "producing" those things and this cost must finally be paid by the consumer, plus whatever profit is made.

Get Fixed on Fertilizer Now

DURING the shortage and high price of labor one of the best means of increasing the yield at a minimum for labor is to fertilize the land judiciously. Just as many bushels of grain may be produced from 20 acres as from 30 if fertilizers are applied to the 20 and none to the 30 acres. Every effort should be made to figure out the fertilizer requirements for the fall seedings, and order at once. The car shortage, together with more or less congested traffic, will make it impossible to secure fertilizers on short notice. Fertilizers should be at the farm well in advance of time of seeding, so that the crop may go in at the proper time. It appears that in order to be sure of having fertilizers when needed, farmers will have to abandon the old method of seasonal buying and lay in their stock of fertilizers early in the season, as they do coal.

Bulletin Helps for Farmers

It is stated that soil erosion or the washing away of earth by water, costs the farmers of the United States $100,000,000 every year. Any farmer whose farm is contributing to this total should study Farmers' Bulletin No. 997, "Terracing Farm Lands," recently reprinted and now ready for distribution.

In a time when both the subjects of forestry and co-operative marketing are to the fore Farmers' Bulletin No. 1140, "Co-operative Marketing of Woodland Products," is timely and will interest farmers whose wood-lot problems are needing solution.

"Dockage Under the Federal Wheat Grades" is a subject every farmer with wheat to sell should understand if he wants to be sure of getting full value in grading. Farmers' Bulletin No. 1118 gives the necessary information in attractive and readable form.

Any of the above farmers' bulletins may be obtained free by addressing the Division of Publication, Department of Agriculture, Washington, D. C.

PRIZE LETTER

Not Forgetting the Stomach

MRS. M. F. SMITH.

The scientific method of cooking meats is quite satisfactory, I find. If I have a piece of beef to boil and I think it a little tough, I wash it in tepid water and bathe it in cider vinegar. This seems to soften the tissues. If we want the full strength of the meat, put it in the kettle with the water just boiling hot, and keep it boiling about ten minutes, then set the kettle back where it will be just at the boiling point, until it is tender. This boiling hard for ten minutes coagulates the pores and prevents the juices from escaping, so all, or nearly all, the nutritive elements are kept in the meat. If one desires a rich broth, the meat should be put on to cook in cold water, bringing it slowly to the boiling point. This putting the meat in cold water allows the juices, in part, to escape. However, it does not destroy the nutritive elements of the meat. Fowls also are best if put in boiling water.

Fish is nice, after being cleaned, if let stand a little while before cooking, with salt and a little pepper sprinkled over; then rolled in flour and fried in hot lard to a rich brown.

Potatoes are more nutritious if cooked with their jackets on. Only pare a little strip around them. The most nutritious part of the potato is next to the outside coat.

As carrots are said to make the skin beautiful, and the ladies, as a rule, like to be pretty, try cooking carrots and onions together. Slice both carrots and onions about one-quarter inch thick, cook until tender in water, then add salt, pepper, a little butter and some sweet cream or milk, with a little flour to just thicken it a little. This makes a very nice, palatable dish.

Delaware.

PRIZE LETTER

Adorning the Farm Home

MISS M. T. MAHONEY.

A few years ago I resolved to improve our farm home by adorning it with beautiful shade trees, flowers and shrubs. I spent some time in studying the seed catalogues before I made up my order, as I was anxious to select quick-growing trees, and my flowers, vines and shrubs must produce an abundance of blossoms the entire summer. Although I do not claim to have a large variety of flowers and shrubs, these begin to bloom early in April and they continue to give me flowers until frost. The majority of these were planted near the foundation of my home, and now they are quite beautiful and very effective. In April the forsythia, lilac and bridal wreath are the first shrubs to bloom; then in May I have the deutzia, the weigelia, snowball, almond bush, etc.; these are followed by roses, hydrangeas, yucca plants; then later in the summer I have the old-fashioned hollyhock, golden glow, althea, the purple and white phlox, August lilies, etc. The clematis vine is always covered with tiny white flowers in August, and then there are so many beautiful perennial flowers, like the incessant little bloomers, the coreopsis, foxglove, digitalis, etc., and these are joined later by the chrysanthemums. Then, too much praise cannot be given to the half hardy perennial, the scarlet sage; it is very showy and it blooms constantly from July until late in the fall. Once these shrubs, vines and flowers are set out carefully, they will prove to be great bloomers and a real delight to the owner, providing they are given a good mulching occasionally, and the pruning shears must be used to keep them in subjection. So many farm women claim they cannot find time to cultivate flowers nowadays, yet if they would resolve to spend a few minutes every day in cultivating some of these old-fashioned flowers, their interest in the great outdoor life would be increased greatly, the appearance of the farm home would be improved considerably and they also add to the value of the farm.

Virginia.

PRIZE LETTER

Music an Element of a Happy Home

AMANDA BARNARD.

Tired minds and bodies are rested and renewed by good music. Happy is the family that can gather round a piano or organ and sing.

But so many that really love music cannot play or sing. And many families feel that they cannot afford a piano and the expense of music lessons, and unless one is a natural musician and well trained, her playing may be an infliction instead of a pleasure to her friends. So it seems to me that a good Victrola or other reproducing instrument, from which one can hear the great singers and the fine instrumental pieces, is one of the great blessings and within the reach of all. In this way young and old can each enjoy their favorite tunes, and quite small children will learn the airs.

But however pleasant our surroundings, unless love and forbearance are present, happiness cannot abide. Criticism and fault finding mar many a home, and ridicule of those one really loves best is so often, perhaps thoughtlessly, used, I know of many a life that has never recovered from hurts to a sensitive nature in childhood. Faults can be pointed out in private and not leave a sting, but never ridicule your children.

New York.

PRIZE LETTER

Efficiency in the Kitchen

MISS M. T. MAHONEY.

On account of the scarcity of help these days the energetic housekeeper must plan and scheme to make her kitchen as convenient and as comfortable as possible. The farmer is continually adding new labor-saving machinery to enable him to till and to house his crops, so the ambitious housekeeper will strive to serve tempting meals and yet not spend a great deal of her time in the kitchen.

I have discovered this can be accomplished to a great extent, first, by renovating the kitchen completely, if necessary; this does not mean it is necessary to spend a vast sum of money, but a few improvements may be added gradually. Aim to make this a bright, convenient work room; paint the walls, ceiling and woodwork some quiet color; stain, paint or varnish the floor if it is new; in case it is beginning to show signs of constant wear, cover it with linoleum. The range, the work table, the sink, the cupboard and the oil stove so arranged that these may be reached with as few steps as possible. Have good aluminum kitchen utensils; these will prove the best even if they are a bit expensive at first. Keep these and your kitchen forks, spoons, egg beaters, potato mashers, etc., in sight. Have a shelf filled with hooks placed near the sink, so that when these are used they may be cleaned easily and put in place again. Have good tin receptacles to hold your light bread and cakes. I bake bread only once or twice a week; this simplifies the preparation of a meal greatly. I can also make enough cakes and cookies to last almost a week by wrapping them in paraffine paper and placing them in a tin box. Enough pie dough may be made at one time to last several days by either baking the crust or by placing the dough in a covered dish and putting it in the refrigerator.

When cooking dinner during the summer or winter months I aim to cook enough for the evening meal; of course, the vegetables are always reheated and the bread may be toasted if we desire it so. During the summer I aim to can and preserve enough fruits to be able to serve them every evening for this meal. When gathering vegetables for the midday meal, often a sufficient quantity may be gathered in one morning to last for two days or more. This saves making trips to the garden during the busy morning hours. These are a few of my time-saving devices which help me greatly with my morning work.

Virginia.

Keep it Warm in Winter

(Concluded from page 229)

In our own home the heat is supplied by a standard make of pipeless furnace, which we have found to be most satisfactory. I can truly say that we have found it to be the most satisfactory heat, for a number of reasons. This statement is made after having had experience with individual stoves, the old standard pipe heater and hot water systems.

With the pipeless furnace you get heat and ventilation at the same time, something not attained with any other system of heating; the house, both upstairs and down, is comfortably heated with less fuel than any other system we have tried; if it is necessary to close up the house at any time during the winter it can be done without draining of pipes—a very necessary procedure where a hot-water system is installed; in the late fall and early spring, when not cold enough to have a fire all the time, a little wood burned in the "pipeless" will take the chill off the house and give the desired comfort. Then, too, where running water is one of the conveniences, it may be connected with the furnace and a plentiful supply of hot water furnished for culinary purposes, washing and the bath at all times, with no extra cost for fuel to heat it.

Thus it will be seen that the pipeless heater saves fuel, provides a bountiful supply of hot water, gives bodily comfort and breeds a spirit of contentment—the goal of all true home makers.

New Jersey.

PRIZE LETTER

Get Rid of Useless Things

EMELINE GRAYBILL

Aren't we all glad these days when no "help" can be had, that it is no longer "the thing" to have our walls covered with fancifully framed pictures, wall pockets and other dust catchers, to say nothing of the straw or paper air castles or "fly roosts," as the men called them? But even so haven't many of us retained things in our homes that are neither really useful nor ornamental? One acquaintance said that the agent from whom she bought her new piano offered only fifteen dollars for her old one and it was worth that to her for the children to have a place to pitch things. Evidently it did not occur to her that the children should be forming the habit of putting things where they belong, instead of "pitching" their school books and wraps anywhere. Of course, this friend is not a Practical Farmer woman. It is a good plan to take inventory sometimes and see if we are not dusting and caring for things just because they have always been there and not for any real use or beauty they possess. Then, if doubtful about any article, whether table, chair, vase, picture or whatever, put it away for a time, till we see if it has been of sufficient use to justify its return to its old place. For instance, the spare bed room has four tables in it—just moved in there when some new piece of furniture crowded it from some other room. Yes, they are all very neat and pretty, with their fancy doilies or covers, books, vases, etc., but one stand for reading or writing and to hold a lamp or flower glass, is all that the occasional guest finds necessary; and think of the restful spaces that the other three would leave, and the energy and time saved when they no longer need attention. When the annual community sale comes around these unnecessary pieces may bring a little sum to be added to the savings for the phonograph we so much desire, and at the same time some neighbor who needs just such an article as we have discarded may be benefited, too.

Virginia.

Let in Air and Sunshine

(Concluded from page 229)

while yet alive. Still all these without love—unselfish love—are of little avail for true happiness.

I believe in practicing all the things learned in my dietettic course, as it is very necessary to pay attention to "tummies," but there are two other things which need equally serious attention—the heart and the soul. "We cannot live by bread alone." Read and be practical.

New Jersey.

Women's Exchange Topics

SEPTEMBER 1.—One correspondent proposes that we discuss "different ways of putting up peaches," while another asks for "cucumber pickle recipes." As they are both reasonable, let's combine these two topics in one Exchange. Give your recipes briefly but fully.

SEPTEMBER 15.—A correspondent suggests as a topic for discussion, "What I am doing to keep my family healthy"—and it appeals to the Editor as having great possibilities of helpfulness. Nearly all wives and mothers—and some sisters—have strong ideas on this subject. Let's have them!

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

PRIZE LETTER

Brightening the Background

MRS. H. H. HUDGINS.

When I first moved to the farm from the city, I found the house sadly in need of having something done to make the walls more pleasant. They were low-pitched, stained and badly cracked. But for the last I should have used kalsomine or some of the other preparations of that nature, but decided that wallpaper, like charity, would cover a multitude of faults, so determined to paper them. As there was no paperhanger convenient, and to get one from the city would prove rather expensive, my husband and I determined to do it ourselves. As we were new to the business, we chose neat but inexpensive papers for our first trial. The first I put up remained for at least three weeks, and then one morning I walked into the nursery to find the entire walls lying in the middle of the room. It had all come off in one large sheet. I asked everyone who knew anything about wallpaper and also sent to a mail order house for directions about preparing the walls, and the combined advice led to very pleasant results. First we rubbed and scraped off all the whitewash we could, then we washed the walls with strong vinegar, wiping them off with a cloth as if wiping up a floor, then with a paint brush we applied a glue sizing made of carpenter's glue mixed in the proportion of a pound to about six or eight quarts of water. When that was dry I took strips of old sheets, and dipping them into the paste carefully covered all cracks in wall and ceiling. I was then ready to begin my work properly. The walls being low, we selected a narrow border, and for the hall a striped paper which gave a higher effect; for the sleeping rooms a light gray background with a little vine of green, pink and white, which was very restful to the eye. The dining room was papered in tile effect, and when completed we had a home that was not only attractive and home-like, but one that was not expensive. Whenever the paper would become soiled we would renew, which could not have been done had we selected an expensive paper at first.

Virginia.

PRIZE LETTER

A Summer Kitchen

IDA E. BLOYE.

There is one convenience in our home that makes it more "homey" than all the rest. That is a summer kitchen. Our house, like many other farm houses, does not have a porch at the back of it—only a woodshed considerably longer than it is wide.

As we could not afford to build a screen porch, a number of years ago we made part of the woodshed into a summer kitchen. A door opened out of the south end of the woodshed, and one opposite it in the north end. These doors were on the side of the shed near the rest of the house, and on this side a door opened into the winter kitchen—which we use for a dining room in the summer time—midway between the two outside doors. We divided the shed with a board partition, using one side for the summer kitchen, the other for wood. A door was made in this partition to let the breeze blow through from the outside doors, and a large window was cut and covered with screen wire, on the side opposite the winter kitchen. On this side of the room near the screened window we put the stove. The air blowing through from the opposite outside doors on the side of the stove next to the winter kitchen, kept all the heat away from the rest of the house, making it so cool and delightful that neighbors would ask, "How do you keep so cool when our house is just unbearable with heat?" But when they had been a few minutes in the room where the cook stove was they understood. It was so nice and breezy that no matter how hot a fire we had it was really delightful to work there, and the men enjoyed the nice, cool eating room. We all think the summer kitchen is as good as a screened porch.

New York.

PRIZE LETTER

"Family Night" and "Visitors' Night"

MRS. HATTIE HALL.

"Family night" has been a decided success in our home, toward making home the real attraction that it should be to old and young. Each member has a part; all become interested. One evening a week is planned for by some member of the family, chosen by all, to have entire charge of a little entertainment. Father has the old-time songs, mother poems, guessing contests; popcorn, taffy, fudge, apple roasting follow in winter months. The young people plan charades and playlets, or make an exhibit of school work. A bulletin board in the dining room has placed upon it the school reports, of interest to all. Announcement of church entertainments, baseball games, the Sunday School picnic date (of vital interest). All may seem commonplace, but it is a tie that binds family life together, and "home" is the foundation of the nation.

The winter months pass more pleasantly, as a little program is always being planned for. The Sunday evening lunch is prepared and served by the younger members of the family, giving father and mother an hour together while the clearing away process is in order. Then all go to a church service or enjoy a sing at home.

"Visitors' night" once a month is a decided feature when a friend—neighbor or schoolmate—can be invited in to share the good cheer and real hospitality be exemplified. The young people are taught to entertain simply, to enjoy real wholesome pleasure—the family circle widened and strengthened.

New York.

PRIZE LETTER

A Homey Home on Little Money

MRS. H. R. BEACH.

If one has plenty of money it seems to me a small matter to make the home beautiful and convenient. But when prices are so high we poor folks must try to find ways to beautify the home on as little as possible. Having just bought a farm a little more than a year ago, and having a large debt on our hands, we have not been able to add many conveniences yet. We painted the house, doing the work entirely ourselves, and also piped the water from a spring to house and barn. These alone make a big difference in appearance, and also make work easier. We have also torn away several old buildings that were entirely useless. They were the first thing noticed by anyone who passed, and also an eyesore to ourselves.

We could not afford an expensive light system, so we got a gasoline lamp and think it just fine. It gives a good light at a small cost. I purchased an oil stove several years ago at a public sale, for fifty cents, and it is still working well. A home-made fireless cooker can be made at home with practically no expense whatever, and saves fuel and time.

My husband is quite handy with carpenters' tools. He has made a library table for our living room; a porch swing, magazine stand, flower stands, and other small pieces that are quite as good as bought ones.

Everyone can have flowers and there is nothing that brightens up the home and surroundings at so little expense. I prefer the hardy plants, especially with children, as they require less work and are so beautiful; roses, pæonies and many others are easily grown. Scarlet sage and asters seem to me to take first place among the annuals and bloom until frost. A flower box along the porch is easily made and is worth many times its cost. A nice lawn with shade trees adds greatly to appearances and help to keep the house cool in summer.

We must try to find ways to make our home "homey" if we would keep our children on the farm after they grow up. And after all, aren't they the most important part of our home, anyway?

Pennsylvania.

Keep it Cool in Summer

(Concluded from page 229)

thrown up or entirely removed without admitting flies. We prefer this plan, even to removable sliding screens, of which we have only two or three.

When it is very hot we never have a fire in the wood stove at all. I could not always fry cakes for breakfast over my oil stove, but I am used to it now and it works very nicely. I have a new 6-quart aluminum kettle with a perforated dish to fit inside for a steamer, and another, unperforated, to use as a double boiler, so that I can cook as many as four articles over one burner, if necessary. I boil potatoes in the kettle, steam or otherwise cook anything desired in the extra compartment; use a common steamer on top as on any kettle and scald a pan of cottage cheese above the steamer. It is ideal to keep a meal warm in case it has to wait a long time, too.

It surely pays to give plenty of thought to these things, because fuel is expensive, besides being unendurably uncomfortable on very hot days, and a little expense and much forethought keeps most of the heat outside.

New York.

The average for the fertilized but unlimed corn for the past 19 years at the Ohio station has been 42 bushels, while the average yield for the limed and fertilized land has been advanced to 49 bushels.

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August Garden Notes

W. F. MASSEY

My late Irish potatoes were planted July 16th. I usually plant at this time some one of the early varieties which have been kept over in cold storage. These make a good fall crop and the best of seed potatoes for the spring planting. But this season the seedsmen were cleaned out of this class of seed and I had to plant simply for the winter table use the old Peachblow.

My early potatoes were of the Bovee variety. This, too, is an old sort but a good and productive one. On the Delaware-Maryland Peninsula the potato planting can be continued to the first of August.

I still intend to plant some of this summer's seed potatoes to grow a second crop for spring seed. Will spread the potatoes out on the grass and cover them with old pea vines after cutting in half. Then, as the early roasting ears are off the stalks the corn stalks will be pulled up and that space used for planting these as they show signs of sprouting. These will grow till cut down by frost and will not make very large potatoes, but will make excellent seed for the spring planting.

In fact, the northern growers are getting much interested in the second crop seed potatoes, as they find that they make a more healthy growth and a larger yield than the Maine seed. One grower in Monmouth Co., N. J., wrote me that the southern seed made double the crop of the Maine seed, and another New Jerseyman wrote recently that he wants to secure 150 bushels for next spring's planting, and wants to get and store them this fall.

Thirty years ago, when I was connected with the Experiment Station in North Carolina, I reported that I had found the southern second crop seed potatoes gave a better crop than the northern seed. Other stations in the North seemed to doubt it. I made an arrangement for a competitive experiment with the New York Cornell Station and the Maine Station. They were to send me Early Rose potatoes grown by them and I was to plant them in separate plats. From these I was to grow some second crop seed. These were to be planted in North Carolina, New York and Maine alongside of more seed from New York and Maine. That summer I photographed adjoining rows showing the manner of growth of the two. My second crop seed grew with a strong ventral stalk, while the northern seed grew a bunch of stems. Then at maturity I dug 15 hills of each, piled them up and photographed them. The northern folks stopped sending me their seed then. One distinguishing feature is the manner of growth. The northern potatoes are dug far earlier than our late crop, and they inevitably sprout in the cellar, and the sprouts are rubbed off before shipping South. Then they grow from a lot of lateral buds. On the other hand, the southern potatoes are seldom dug before December and are again planted in February. They are slower to start than the northern potatoes, but they grow with the strong terminal bud, for they never sprout in storage. Anyone accustomed to potato growing will know that a potato plant growing with one strong stem will always make a better crop than a plant which grows from a cluster of stems.

The past two seasons our truck farmers here (Maryland) have been growing a summer squash they call Italian. It is cucumber-shaped and dark green in color with light stripes. It seems that it is not yet well fixed in habit. Most of the plants are of the bush habit, but now and then one will strike out and run worse than a pumpkin. Then, too, some come out of color, or pale greenish white, like the old Patty Pan, but still of the elongated shape. These are considered sports and the striped ones are preferred. I tried them in my garden last summer, but got hold of the running sort, and it spread so that it was a nuisance in the garden. This year I went back to the Patty Pan. But the Italian is certainly fine in quality and our growers have been getting very good prices for them. They can be grown still before frost.

In early August it is well to sow a few seeds of the Early Milan turnip for fall use. These grow as quickly as a radish and last but a comparatively short time without getting pithy. There is an old turnip with growth similar to a rutabaga, which I found years ago to be the sweetest of turnips. We then called it Long White French, and some called it White Rock and some Sugar turnip. Sown as early as practicable in August or late July, in rows well fertilized, this variety will make fine roots. It is a very hard-fleshed turnip and keeps in winter easily put in a heap and covered with earth, or here can be left out and covered with pine needles.

For sowing in August there are two varieties of turnips I have found good for winter use. These are the Golden Ball and the Yellow Aberdeen. They should be sown rather early, or earlier than the strap-leaved turnips. To my taste, they are far better than the strap-leaved ones.

The best seed potatoes of the sweet potatoes are produced by making cuttings in late July and August about two feet long. Coil these on the hand and insert the whole coil in the hill except the mere growing point. These will make small potatoes that will keep far better than the early crop and will make healthy potatoes for bedding. This season I note that some of our growers were setting cuttings by the middle of July. I rather expect they will find these to make table potatoes rather than bedding slips. A few years ago one large grower here had 3,000 bushels of marketable potatoes from cuttings in a late favorable season.

Plant now an abundance of Red Valentine beans for canning or putting down in brine for the winter. It is very easy to put them in stone jars with a strong brine and weight to keep them under the brine. Then in winter they can be taken out and soaked over night and will be found excellent. Canning is also good, but this season cans are not to be had and they will have to be canned in glass jars.

WHERE THE SWEET CLOVER GROWS

EDGAR L. VINCENT

WHERE the seed came from that brought that sweet white clover into the hilltop pasture, I never knew. The land had been covered with brush and briars, so thick that neither cow nor sheep could find a spear of grass there to eat; only leaves of sapling and thornset bush grew for their daily sustenance.

But we cut the brush off clean, piled it, made wood of the little tree trunks and burned the rest, and went away, never thinking but that we would be compelled to sow seed on the ground if we were ever to see grass grow for the friends of the field. And lo! in a little while there was the beautiful white clover, growing right where the brush and the weeds and the briars had been. It seemed a mystery, one of the secrets nature seems to like to keep all her own. How could it be that clover should grow in such a forbidding place? So we puzzled over it.

But now of one thing I am sure. Some time or other in the past, white clover must have grown in that field. Ripening, it dropped its tiny seeds. Wind swept the dust over them. Deep buried they lay until something happened to bring them to life. That something was the work we did with ax and scythe, clearing away the foul stuff that had grown above them so long. Then the sunshine warmed those tiny seeds; the dews and the soft showers moistened the germs which had been dormant so long. Up they sprang, fresh, radiant, beautiful, to take their part in the life of their day.

It is like that sometimes in the life of a man. For years he may show little or no sign of living the good, clean, right life. We are pained at his lack of appreciation of the value of their living. Then something stirs in the heart of that man, and he rises out of the shadows to be in God's pure sunshine and to serve the rest of his days. And we wonder how it is.

Go back through the years. Once a mother held the boy between her knees and whispered into his ears the story of Jesus. Or was it some good friend who leaned down over the lad and told him how the love of God follows the trusting heart to the end? Somewhere, some time, we may not know when nor where, the seed was sown which later bore such good fruit.

Here is a blessed truth for us all. As we go along life's way, some kind of seed we are sowing. In the heart of some boy or girl, some man of older growth, the words we speak, the deeds we do are finding lodgment and one day will leap into new life.

Weeds and briars may grow above the couch where the kindly word we spoke lies sleeping; mosses and worthless shrubs may hide it for a time. In God's own time it will come to the light again; for God has been watching over it and He will not let it die unblessed.

But we have no opportunity, so we say. How can we do anything that will help another in the days to come? Let's not worry over lack of opportunity. God will see to it that we have our chance. Only let us be wise enough to see and to recognize the privilege that has been thrown in our way.

And He who sends the opportunity will take care of all the rest. All we need to do is to sow the seed and go on our way. We may never see the flower that springs; no sign of fruit may rejoice our sight now; but hereafter, some time we shall know and be happy because of the work we have done.

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This Year's County Fairs

New York

COUNTY PLACE	DATE
Albany, Altamont	Sept. 21-23
Allegany, Angelica	Sept. 21-24
Allegany, Cuba	Sept. 14-17
Allegany, Wellsville	Sept. 28-Oct. 1
Broome, Whitney Point	Aug. 10-13
Broome, Binghamton	Sept. 28-Oct. 1
Cattaraugus, Little Valley	Sept. 6-10
Chautauqua, Dunkirk-Fredonia	Sept. 13-17
Chemung, Elmira	Oct. 5-8
Chenango, Norwich	Aug. 24-27
Chenango, Afton	Sept. 14-17
Clinton, Plattsburg	Sept. 6-10
Columbia, Chatham	Sept. 8-11
Cortland, Cortland	Aug. 16-19
Delaware, Delhi	Sept. 6-9
Delaware, Walton	Aug. 31-Sept. 3
Dutchess, Rhinebeck	Sept. 7-10
Erie, Hamburg	Sept. 27-Oct. 2
Essex, Westport	Aug. 24-27
Franklin, Malone	Sept. 14-17
Fulton, Johnstown	Sept. 1-4
Genesee, Batavia	Sept. 21-25
Greene, Cairo	Aug. 17-19
Herkimer, Herkimer	Sept. 6-8
Jefferson, Watertown	Sept. 7-10
Jefferson, Cape Vincent	Sept. 14-17
Lewis, Lowville	Aug. 31-Sept. 3
Livingston, Avon	Sept. 14-17
Livingston, Hemlock	Sept. 29-Oct. 2
Livingston, Caledonia	Aug. 11-14
Madison, Brookfield	Sept. 6-9
Madison, De Ruyter	Aug. 10-13
Monroe, Brockport	Sept. 1-4
Monroe, Rochester	Sept. 6-11
Montgomery, Fonda	Sept. 6-9
New York, New York	Nov. 3-5
Oneida, Rome	Aug. 31-Sept. 3
Oneida, Vernon	Sept. 23-25
Oneida, Boonville	Sept. 6-10
Ontario, Canandaigua	Sept. 16-18
Ontario, Naples	Sept. 8-10
Orange, Middletown	Aug. 17-20
Orleans, Albion	Sept. 8-11
Oswego, Fulton	Aug. 31-Sept. 3
Oswego, Sandy Creek	Aug. 17-20
Otsego, Cooperstown	Sept. 1-3
Otsego, Morris	Oct. 5-8
Otsego, Oneonta	Sept. 20-24
Otsego, Richfield Springs	Sept. 27-30
Queens, Mineola	Sept. 21-25
Rensselaer, Nassau	Sept. 14-17
St. Lawrence, Canton	Aug. 24-27
St. Lawrence, Ogdensburg	Aug. 31-Sept. 3
St. Lawrence, Gouverneur	Aug. 17-20
St. Lawrence, Potsdam	Sept. 21-23
Saratoga, Ballston Spa	Aug. 29-Sept. 3
Schoharie, Cobleskill	Sept. 27-Oct. 1
Schuyler, Watkins	Sept. 14-16
Seneca, Waterloo	Sept. 21-23
Steuben, Bath	Sept. 28-Oct. 1
Steuben, Hornell	Aug. 31-Sept. 3
Steuben, Troupsburg	Sept. 7-10
Suffolk, Riverhead	Sept. 14-17
Sullivan, Monticello	Aug. 31-Sept. 3
Tioga, Owego	Sept. 7-10
Tompkins, Ithaca	Aug. 31-Sept. 3
Tompkins, Trumansburg	Aug. 24-27
Ulster, Ellenville	Aug. 24-27
Warren, Warrensburg	Aug. 17-20
Washington, Hudson Falls	Aug. 24-27
Washington, Cambridge	Aug. 17-20
Wayne, Palmyra	Sept. 23-25
Wyoming, Warsaw	Aug. 24-27
Wyoming, Perry	Aug. 17-19
Yates, Penn Yan	Aug. 31-Sept. 3
Yates, Dundee	Oct. 12-14
New York State Fair, Syracuse	Sept13-18

Pennsylvania

COUNTY PLACE	DATE
Allegheny, Imperial	Oct. 12-14
Armstrong, Apollo	Aug. 4-7
Armstrong, Dayton	Sept. 28-Oct. 1
Beaver, Junction Park	Sept. 22-25
Bedford, Bedford	Sept. 28-Oct. 1
Berks, Reading	Sept. 14-18
Berks, Kutztown	Aug. 24-28
Blair, Altoona	Sept. 21-24
Bradford, Towanda	Aug. 31-Sept. 3
Bradford, Athens	Sept. 13-18
Bradford, Troy	Sept. 7-10
Butler, Butler	Sept. 7-10
Butler, Donegal Twp.	Aug. 31-Sept. 3
Butler, North Washington	Sept. 14-17
Cambria, Carrolltown	Sept. 14-17
Carbon, Lehighton	Sept. 30-Oct. 5
Chester, West Chester	Sept. 1-4
Clarion, Clarion	Sept. 21-24
Clearfield, Clearfield	Sept. 28-Oct. 1
Columbia, Bloomsburg	Oct. 5-9
Crawford, Exposition Park	Aug. 31-Sept. 3
Crawford, Titusville	Sept. 14-17
Elk, St. Marys	Sept. 21-23
Erie, Erie	Aug. 23-28
Erie, Wattsburg	Sept. 7-10
Greene, Cumberland Twp	Oct. 12-15
Greene, Waynesburg	Aug. 24-27
Huntingdon, Alexandria	Oct. 13-15
Indiana, Indiana	Sept. 7-10
Jefferson, Brookville	Sept. 14-17
Jefferson, Punxsutawney	Aug. 24-27
Juniata, Port Royal	Sept. 7-10
Lackawanna, Clarks Summit	Sept. 7-11
Lancaster, Lancaster	Sept. 30-Oct. 1
Lawrence, Pulaski	Aug. 17-19
Lebanon, Lebanon	Aug. 31-Sept. 3
Lebanon, Lebanon	Dec. 3-4
Lehigh, Allentown	Sept. 20-25
Luzerne, Dallas	Sept. 21-24
Lycoming, Hughesville	Oct. 19-22
Mercer, Stoneboro	Sept. 27-30
Monroe, Stroudsburg	Sept. 6-10
Northampton, Nazareth	Sept. 14-18
Northumberland, Milton	Oct. 12-15
Perry, Newport	Sept. 14-17
Philadelphia, Byberry, Phila.	Sept. 6-11
Somerset, Meyersdale	Sept. 21-24
Somerset, Somerset	Sept. 28-Oct. 1
Sullivan, Forksville	Sept. 29-Oct. 1
Susquehanna, Harford	Sept. 14-16
Susquehanna, Montrose	Sept. 7-9
Tioga, Westfield Twp.	Sept. 7-10
Union, Lewisburg	Oct. 12-15
Venango, Oil City	Oct. 27-29
Warren, Warren	Sept. 7-10
Washington, Arden	Aug. 31-Sept. 3
Washington, Burgettstown	Sept. 28-30
Washington, West Alexander	Sept. 14-16
Wayne, Honesdale	Oct. 5-8
Wyoming, Tunkhannock	Sept. 14-17
York, Hanover	Sept. 21-24
York, York	Oct. 5-8

Ohio

COUNTY PLACE	DATE
Adams, West Union	Sept. 7-10
Allen, Lima	Aug. 24-27
Ashtabula, Jefferson	Aug. 17-19
Athens, Athens	Aug. 24-27
Auglaize, Wapakoneta	Aug. 30-Sept. 3
Belmont, St. Clairsville	Oct. 5-8
Brown, Georgetown	Oct. 5-8
Butler, Hamilton	Oct. 5-9
Carroll, Carrollton	Sept. 28-Oct. 1
Champaign, Urbana	Aug. 10-13
Clark, Springfield	Aug. 17-20
Clermont, Owensville	Aug. 17-20
Clinton, Blanchester	Aug. 24-27
Columbiana, Lisbon	Sept. 14-16
Coshocton, Coshocton	Oct. 5-8
Crawford, Bucyrus	Sept. 8-11
Cuyahoga, Chagrin Falls	Sept. 6-9
Darke, Greenville	Aug. 23-27
Defiance, Hicksville	Sept. 14-17
Erie, Sandusky	Sept. 21-24
Fairfield, Lancaster	Oct. 13-16
Fayette, Washington C. H.	Aug. 17-20
Franklin, Hilliard	Sept. 8-10
Fulton, Wauseon	Sept. 7-10
Gallia, Gallipolis	
Geauga, Burton	Sept. 14-17
Greene, Xenia	Aug. 3-6
Geurnsey, Old Washington	Sept. 28-Oct. 1
Hamilton, Carthage	Aug. 11-14
Hancock, Findlay	Sept. 15-18
Hardin, Kenton	Aug. 24-27
Harrison, Cadiz	Sept. 14-16
Henry, Napoleon	Aug. 31-Sept. 3
Highland, Rainsboro	
Hocking, Logan	
Jefferson, Smithfield	Sept. 22-24
Knox, Mt. Vernon	Aug. 24-27
Lake, Painesville	Sept. 15-18
Lawrence, Proctorville	Aug. 24-27
Licking, Newark	Sept. 14-17
Logan, Bellefontaine	Sept. 28-Oct. 1
Lorain, Elyra	Sept. 4-7
Lucas, Toledo	Aug. 24-28
Madison, London	Aug. 24-27
Mahoning, Canfield	Sept. 7-9
Marion, Marion	Sept. 21-25
Medina, Medina	Sept. 21-23
Meigs, Rock Springs	
Mercer, Celina	Aug. 17-20
Miami, Troy	Sept. 21-24
Monroe, Woodsfield	Aug. 24-26
Montgomery, Dayton	Sept. 6-10
Morgan, McConnelsville	Sept. 14-17
Morrow, Mt. Gilead	Sept. 28-Oct. 1
Muskingum, Zanesville	Aug.17-20
Noble, Caldwell	Sept.1-3
Paulding, Paulding	Aug. 30-Sept. 3
Perry, N. Lexington	Sept 8-10
Pickaway, Circleville	
Pike, Kiketon	Aug. 4-6
Portage, Ravenna	Aug. 24-27
Preble, Eaton	Sept. 27-Oct. 1
Putnam, Ottawa	Sept. 28-Oct. 2
Richland, Mansfield	Sept. 22-25
Sandusky, Fremont	Sept. 14-17
Scioto, Lucasville	Aug. 10-13
Seneca, Tiffin	Aug. 24-27
Shelby, Sidney	Sept. 14-17
Stark, Canton	Sept. 22-25
Summit, Akron	Sept. 28-Oct. 1
Trumbull, Warren	Aug. 31-Sept. 1
Tuscarawas, Dover	Oct. 11-14
Union, Marysville	Sept. 7-10
Van Wert, Van Wert	Sept. 6-10
Warren, Lebanon	Sept. 14-17
Washington, Marietta	Sept. 15-17
Wayne, Wooster	Oct. 4-7
Williams, Montpelier	Sept. 14-18
Wood, Bowling Green	Sept. 13-17
Wyandot, Upper Sandusky	Sept. 14-17

Delaware

Delaware State Fair, Wilmington Sept. 6-10

West Virginia

COUNTY PLACE	DATE
W. Va. State Fair, Wheeling	Sept. 6-10
Mercer, Bluefield	Sept. 7-10
Harrison, Clarksburg	Sept. 21-24
Ritchie, Pennsboro	Sept. 14-17
Jefferson, Shepherdstown	Aug. 31-Sept. 3
Lewis, Weston	Sept. 27-30

New Jersey

COUNTY PLACE	DATE
Hunterdon, Flemington	Aug. 24-27
Burlington, Mt. Holly	Sept. 14-17
Sussex, Branchville	Sept. 21-24
Morris, Morristown	Sept. 23-25
Inter-State Fair, Trenton	Sept. 27-Oct. 1
Cumberland, Bridgeton	Sept. 1-2
Cape May, Cape May C. H.	Undecided

Maryland

COUNTY PLACE	DATE
Frederick, Frederick	Oct. 19-22
Dorchester, Cambridge	Aug. 3-6
Montgomery, Rockville	Aug. 24-27
Worcester, Pocomoke City	Aug. 17-20
State Fair, Timonium	Aug. 31-Sept. 6
Garrett, Oakland	Sept. 28-Oct. 1
Harford, Bel Air	Oct. 12-15
Baltimore, White Hall	Sept. 29-Oct. 2

Getting Better Pastures

A. E. GRANTHAM

With the increasing cost of labor more attention will be given by the farmers to the growing of grass, either for hay, or for pasture. The farmer has reached a point when he is going to depend more largely on grass as a means of deriving a revenue from his land. With the present high price of labor, and the difficulty of securing it, the land owner is finding it more profitable to keep a larger proportion of his land in grass, and grow more live stock. Whether he will desire to finish off these cattle or not is another question. He is almost compelled under the present conditions to adopt a method of farming whereby the necessity for much hired labor may be eliminated. This means a considerable departure from his former methods of handling his land.

On many farms the number of live stock kept is limited, not by the acres in crops, but by inability of the owner to provide sufficient pasture during the summer months. There was a time when the number of cattle kept on the farm during the year was limited by the supply of winter feed. With the advent of better tillage and harvesting machinery, and the improvement of the silo, this condition has been reversed. This has paved the way for handling large acreages of corn, and has provided a means of preserving an almost unlimited quantity of succulent feed in the form of silage, to be used during the winter months. With silage, corn stover and mixed hay it is possible on the average farm to carry more animals through the winter than can be supported on grass in the summer. Of course, there are several factors that have contributed to the present condition.

There is a larger percentage of the land in rotation now than formerly, and less in permanent pasture. On the other hand, the land now in grass, either in rotation, or in permanent sod, is not yielding as it did formerly. In other words, the pastures are poorer, and do not have their former carrying capacity for stock. Also, a large part of the rotated grass is cut for hay, leaving only a portion of the acreage for pasture, or, in many cases, the rotated field of grass is cut the first year and pastured the second.

With the present economic conditions the question of more and better grass becomes a vital one. The widespread interest manifested in pure-bred beef and dairy stock means that greater efforts will be made to secure more grass. Reports are reaching us from many states that on account of the labor shortage farmers are leaving a considerable portion of their land in grass, and tilling only what they can with the help they have at their disposal. While this leaves a larger acreage for grass, it does not mean good returns will be secured in hay, or pasture. Our poor pasture lands have been the source of comment by those who have observed widely. They cannot understand why we produce good grain crops, and get such poor results in the growing of grass.

This opens the question that has concerned thoughtful agriculturists for some time. We all know the increasing difficulty of getting a stand of red clover. We appreciate the direful results which are in store for us when the future fertility of the soil is considered. After all, the problem of how to get better returns from our grass lands is one that not only concerns our present economic situation, but the more fundamental phases of a thrifty live stock husbandry, and of the maintenance of soil fertility.

SOIL PREPARATION.

This is the season of the year to seed new pastures with best results, particularly in the eastern states. Likewise, labor is less pressing during August than at other times. On land of moderate fertility it is difficult to secure a good stand of grass unless the soil is especially prepared, and the grass seeded alone. The ground should be plowed as early as possible, thoroughly worked down with disk and spiked with harrow. At intervals of a week or ten days, or after each heavy rain, the surface should be stirred to a depth of two or three inches to destroy all weeds and to aid in conserving moisture.

About two weeks before seeding the land should receive a good application of lime, either as prepared or in the form of finely ground limestone. If the limestone is used, apply twice as much per acre as of the prepared, or burnt lime—one ton of burnt lime or two tons of the ground limestone per acre. This should be worked well into the soil by the harrow. The care with which the soil is handled during this period has much to do with the success of the seeding. The aim should be to get the soil well compacted, free from weeds, and with a shallow soil mulch one or two inches deep at the surface. This will result in having sufficient moisture near the surface to germinate the grass seed even during a dry period.

FERTILIZERS.

Grass seeded in the late summer or early fall should be supplied with sufficient available plant food to give the seeding a prompt start, and make a good growth before winter sets in. The success of the seeding, especially with respect to the clover contained in the mixture, will depend on how firmly the plants become established before severe freezing occurs. Just before seeding apply 300 to 500 pounds of a fertilizer analyzing 4 per cent. of ammonia, 10 per cent. of phosphoric acid and 3 per cent. of potash. This fertilizer is desirable on average soils, and for general grass mixtures including clover. Where stable manure is available, and the seeding is to be made on a heavy clay soil, an application of 400 pounds per acre of a mixture containing 2 per cent. of nitrogen and 10 per cent. acid phosphate would prove satisfactory. Under any condition some available nitrogen should be used to get prompt growth. Any fertilizers should be broadcasted or drilled and carefully harrowed in a day or so before seeding.

GRASS MIXTURES.

When land is to be used only two or three years as pasture, those plants should be selected that make a full growth in a short time, such as red

and alsike clovers, timothy, red top and orchard grass. For a more permanent pasture, alfalfa, Kentucky blue grass and meadow foxtail, meadow fescue and Canadian blue grass may be added to the above. Usually those kinds are selected that make a tall growth, such as timothy, red top, tall fescue, alsike and red clover. In seeding permanent pastures, care should be taken to select those plants that will combine to give more or less continuous growth through the season. Some should mature early so as to help keep the weeds in check, while others should aid in making a close, dense turf.

Where the land is to be cut for hay it is not desirable to use too many kinds of grass in the mixture. The following mixtures of seeds are often recommended in permanent pastures: Timothy, 8 pounds; red clover, 6 pounds; alsike, 3 pounds; white clover, 1 to 2 pounds; Kentucky blue grass, 4 pounds; meadow fescue, 2 pounds, and orchard grass, 2 pounds. For land of ordinary fertility and well drained, this mixture will give satisfactory results. For permanent pasture on wet land, alsike clover, 8 pounds; red top, 14 pounds; perennial rye grass, 12 pounds, and creeping red grass, 6 pounds.

For permanent pasture on light sandy soil: Red top, 10 pounds; white clover, 2 pounds, red fescue, 20 pounds, and orchard grass, 3 pounds. For permanent pasture on very poor acid soils where it is not practicable to lime: Timothy, 5 pounds; alsike, 5 pounds, red top, 3 pounds, and white clover 2 pounds. For re-seeding old pastures that are not plowed up, use timothy, 2 to 3 pounds; red clover, 2 to 3 pounds; alsike, 1 pound; white clover, 1 pound; Kentucky blue grass, 4 pounds, and meadow fescue, 3 pounds.

The above quantities refer to the amount per acre.

While several kinds of grass are seeded at the same time, it will be found that the timothy, red clover and alsike clover will form the chief proportion of the cutting pasture the first year. After that the timothy and red clover will gradually disappear, leaving the blue grass and white clover in the lead. These are desirable mixtures to use for the purpose of getting a continuous growth of grass through the season, and particularly to get a considerable growth as soon as possible. The valuable points regarding the qualities of some of these less known grasses may be desirable. Red top is not esteemed highly as a hay grass, but plays a useful part because it grows on soils on which timothy will not grow; particularly on wet or acid soils low in plant food. It produces hay or pasture the year after being sown.

Tall meadow fescue requires good land for the best results. It takes about three years to form a good sod, and for that reason is adapted only to permanent grass land. Orchard grass gives a tall growth, and does best on rich soils, but makes a fair growth on any soil. It has the disadvantage of growing in bunches or clumps, making a very rough, uneven sod, but it has the advantage of producing very early spring growth, and where there is more or less shade. Perennial rye grass does best on stiff, wet soils, particularly marshy land. It is chiefly valuable as a pasture grass. Kentucky blue grass is of little value for hay, but produces a pasture of the highest quality. It is not usually seeded alone, owing to the fact that it requires two to three years to reach full growth. It makes an excellent sod on lands to which it is adapted. These are generally clay loams plentifully supplied with lime and phosphoric acid. It begins growing early in the season, and develops late in the fall, providing it has sufficient moisture.

It should not be forgotten that grass, as well as grain crops, require fertilizers and care. Much better crops of hay and pasture may be secured by properly top-dressing, whether with manure or commercial fertilizer. The chief thing is to get a good stand of grass, and then through top-dressing it is not difficult to maintain the sod and secure a good yield.

The soil intended for grass should be plentifully supplied with lime in one form or the other. This is not only necessary to start the grass, but every three or four years the permanent meadows or pastures should be top-dressed with lime. Those spots that show the prevalence of moss should receive an extra application of lime. Old pastures may be renewed by top-dressing the thinner portions of the field with stable manure, and with 200 to 300 pounds of acid phosphate per acre during the late winter or early spring. This, together with the lime, makes conditions favorable for a better stand of grass, providing the thinner portions are re-seeded from time to time. This may be done by scattering the grass seed along with the farm manure, or in some cases by sowing the seed, and then running over the land with a harrow. It is a good plan to run over the pasture field with a spike-tooth harrow late in the fall or early in the spring to distribute more evenly the animal droppings. After top-dressing with manure and re-seeding it may be necessary to go over with a mower once or twice during the season to destroy weeds before they can go to seed. There are bound to be some weeds that are stimulated by the application of manure. Where the grass is quite uneven and the land lies so that it will permit of plowing, often the best thing to do is to plow the land and re-seed entirely. However, where much expense is necessary, care should be taken that the land is well fertilized or manured, so that the grass will make a good growth from the start.

A Practical Idea

(Concluded from page 230)

ers and looking for the bright side of everything, home is going to be homier for us and those about us. To offer offence for offence never gets us anything, but only makes matters worse, whereas, if we can do a good deed for an offence it is going to win the one who has been the offending party and bring us happiness. I teach my children of Jesus and of His goodness to us, and pray with them, and I am sure my children are happier for it and will be better men and women than if raised without this teaching. I try to live so that they can see Jesus in my life.

Pennsylvania.

Field Notes

A. E. GRANTHAM.

Preparations for alfalfa seeding should now be under way. Proper soil preparation is one of the biggest items in getting a successful stand of alfalfa. I have seen many failures which were due primarily to careless methods in fitting the soil. Unless the soil is put in a fine condition of tilth and contains a fair amount of moisture at time of seeding, the stand will be uneven and the growth irregular. By the proper handling of the soil there will always be enough moisture to bring up the alfalfa. This means that the land must be plowed early, at least four to six weeks before seeding, which should be made from the 20th of August to the 10th of September. The ground should be plowed at once and put in a condition suitable for seeding to wheat. This presupposes a firm seed bed with a fine surface soil mulch one or two inches deep. Then, with a disk or spike-tooth harrow stir the surface every week, or after every good rain until ready to seed. This practice will result in a uniform seed bed and keep the moisture near the surface, so that germination will take place promptly. These operations tend to promote the release of plant food in the soil, which will assist the plants in getting a good start. With this accomplished, see that the soil is well limed a week before seeding and supplied with 400 to 500 pounds of a high grade fertilizer just before sowing. With inoculated seed sown at the rate of 20 pounds per acre, good results should follow.

Crimson clover seed will be somewhat lower this season than it has been for some time. This is due to the large importation of seed from foreign countries. In fact, the prospects of a high price for crimson clover seed have been so poor that the growers of Tennessee, where the bulk of home grown seed is produced, did not save their usual acreage for threshing. Crimson clover is one of the very best soil improvement crops we have, and at present prices is the cheapest seed to sow in corn or tomatoes for a winter cover crop. A bushel of seed will sow four acres. The manurial value of the clover, if turned under next May, is equal to the application of 6 to 8 tons of stable manure per acre. The cost of the seed and labor of seeding per acre is less than the cost and application of three tons of manure.

The writer is convinced that the selection of the proper variety of wheat is a very important consideration to the wheat grower. After conducting variety tests of wheat for many years it was very clear to me that certain varieties were much more dependable year after year than others. In selecting a variety of seeding, do not be influenced by the fact that somebody got a very large yield the past season. This may mean very little, as the season and the soil may have been unusually favorable. Rather, find out what the variety has done through several years under varying conditions in your neighborhood. Find out from your experiment station what they know about the variety you want to sow. Sometimes the county agent can give you the exact information you want regarding the value of a proposed variety. When we consider that the difference in yield between two varieties on the same farm and during the same season will sometimes amount to 8 or 10 bushels per acre, or a difference sufficiently large to pay a large part of the cost of production, the importance of attention to variety in wheat is apparent.

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What the Tractor is Doing for Farmers

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1298, SEPT. 1.—Every farmer throughout the land knows the wastefulness of the leaky barnyard, yet, strange to say, most farmers permit this leak to at least some degree. Perhaps you have had some experience in repairing a leaky barnyard by building a stone wall or the use of concrete, or diverting outside drainage. If so, tell us briefly how you did it, the cost and results.

TOPIC No. 1299, SEPT. 15.—Roofing for farm buildings. What kinds have you used and with what success? What is your idea as to economy in roofing? We would like to hear of your failures as well as your successes, as we stand in need of warning as well as recommendation.

S. W. D., Ethridge, Tenn.—Fellows, when do you run your tractor for plowing? When it is muddy and water stands in holes? Well, I guess not. Although this is possible, we do not make a practice of it. But when our smooth land was wet I went into a gravelly field that was rocky, therefore drier. When a stump loomed up in my way, if it was not too solid, I backed the tractor to stump, fastened a chain to it, and out came Mr. Stump. These I rolled over on to the turned ground, then, when through, hauled stumps away. I pulled one so heavy I could not lift it alone.

A wagon, hauling with a team of mules on the place, got mired and couldn't pull out, so I ran little Fordson down and brought them out and they went along.

When they were delivering the tractor and plows, some rough road had to be traveled part of the way, and the tractor was used to pull truck of implements out of bad places. It did this easily.

Of course, the tractor is useful for many things I have not tried yet, but for what I have done I would hate to do without it. I can step out and plow a good strip before breakfast; can plow right up to meal time and not have to take out my team, water, feed and rest it. So much time can be saved and it is not getting tired, and does not eat when weather is unfavorable to work outside.

W. H. T., Lima, Pa.—We do not have a tractor, but I have been very much interested in watching a neighbor for three years, operate a popular two-wheel type machine (a Moline). It has done practically everything in the field a team of horses could, and handled many belt jobs also. It plows eight acres a day at an average cost, according to the way my neighbor figures it, of $2.50 an acre. This includes three gallons of gasoline, oil, wage of operator and something for depreciation. Of course, it pulls two 14-inch bottom plows and turns the soil as deep as field conditions will allow. It had a good test this year pulling a mower through some alfalfa which a good team of horses could hardly handle. The mower choked with the horses, but the tractor went right through with a 5-foot cutter bar and was just fine at the corners. Hooked to the binder it far surpasses horses and it worked very satisfactorily with the grain drill. It has pulled all kinds of combinations of harrows at a great saving of time and man power—two of the biggest problems on the farm today.

As to the up-keep of this tractor, my neighbor tells me it figures about $40 a year. Last year this amount included a new cylinder casting but does not include time for mechanics. All the tinkering with this machine was done in the farm shop and there seems to be no good reason why the ordinary farmer cannot do practically all the repair work on his tractor. Time lost with a machine properly looked after is an unknown fear, according to my observation, and if this man had to return to horses he could hardly get along.

B. B., Tully, N. Y.—On account of the acute shortage of farm laborers a number of tractors were purchased in this vicinity this spring. One man was able to finish his own plowing early enough to plow quite a bit on the farms of two of our adjacent neighbors who were behind with their work. He plowed about five acres a day at five dollars per acre, and did good work where the land was not too stony or wet. A breakdown caused a delay of one whole day, but by means of telephone and motor truck the local agent was able to make repairs quickly. Another neighbor who could not find a hired man let some of his land on shares to a man with a tractor, who probably would not have taken it otherwise. As the tractors are something of an innovation in this neighborhood, we have not seen them used for much except plowing and harrowing, but they will probably be used more extensively in the future after some of the more skeptical have seen them tried out.

J. W. R., Carbondale, W. Va.—For the benefit of those who are contemplating buying a tractor, I wish to give a few suggestions from my experience and those of some of my neighbors.

There are many kinds of tractors on the market today, and it behooves us to first know who stands back of the guarantee, for this we expect to get with the machine. Last spring a nearby neighbor purchased a tractor (I will not give the name of the manufacturer) and for a while it did good service, but by and by, just at the time of the rush season, it began to give trouble. The lower track wheel bearings began to cut out because of not being properly protected from grit and dust. In addition, the connecting rod bearings, which are oiled through the crank shaft by a pump that is easy to become choked up, burned out. He was able to get only about forty days work from this machine during the entire summer, and this at a great deal of expense for costly repairs.

Thus it is a wise plan to know about the service back of a tractor before you buy it. Does the company stand back of their tractor to the extent that they will furnish repairs free for a definite period? Or, if they will not do this, how long will it take to get repair parts, and what will they cost? Remember that a repair part should not cost any more when ordered separately than the same part cost when buying it in the new machine, for it is much easier to tag a part and turn it over to the railroad for shipment than to fix it in its proper place in the machine. Some manufacturers do this, while others charge outrageous prices for separate parts. Be careful who you deal with. It isn't so much what you have to pay for repairs, but the valuable time you lose.

Mrs. E. M. A., Ashville, N. Y.—The tractor is a very useful tool here, when it pays to use any tool at all. After careful figuring, we hired my neighbor's tractor to prepare a part of the ground for the early crops, and by so doing got ten acres of oats and several acres of corn in good season, which would otherwise have been rather late, if it got in at all, and would have prevented working at much more profitable work. The tractor is new this season; the price of plowing is $5 per acre, I believe, and, of course, a great variety of other work is done with the same machine. It does heavy hauling on the road, runs the disc harrows round and round a plowed field at about the rate an auto would run around a race track. We have plenty of horses, and so have our neighbors, but at the present price of labor one simply can't afford to drive them if a tractor is available. It must be a good tractor, of course. One exactly like this one towed several automobiles around in the snow last winter, so its activities surely are not confined to planting and harvesting.

We intended to hire buckwheat ground fitted, but the cost whether we did it ourselves or hired it done, would be greater than a very fair crop would bring this fall, and even so, there are many chances of disaster before harvest, so the ground is lying idle while my brother works out.

The neighbor who owns the tractor we use seems not to have any troubles—another one does, but his tractor is another link in the story of the tractor.

C. C. C., Jr., Penn Laird, Va.—While we do not own or use a tractor, I see them almost in daily use throughout this section. In fact, several of my nearest neighbors own and use tractors of various makes. I must admit I have been deeply interested in tractors for a number of years and have carefully observed their conduct in this section from a farmer's viewpoint, particularly those of my near neighbors, which I have had every opportunity to get on familiar terms with. One thing, among several others, I have learned about tractors is that one cannot attach too

(Concluded on page 239)

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A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER I.—Continued.

"I have to be honest with you, and so I have to fight you." His voice begged her forgiveness. "Of course, I am selfish in it, too—but it is not all selfish. When I see you wasting such a life as yours could be—"

"How can you call it wasted?" she interrupted. "I have done definite things that have helped to better working conditions. I am not born to that work—sometimes I think they have put me on boards and committees merely because they were sorry. But they find out that I am very faithful, and that nothing is too hard or too dull for me to carry out, and so I have made myself a little valuable. Oh, I really have helped. And there is what it has all done for me. You knew what I was as a girl. Think back. Can you say I haven't grown?"

He thought back a long way, his eyes touched at what he saw. "Perhaps I wasn't qualified to judge you very harshly in those days," he admitted, with a wry smile, "but, of course, you are a lot more of a person than you would have been if—all that hadn't happened. Oh, yes. You are like the man who dug up his field to find the treasure, and so got a magnificent crop. Only—isn't it time to stop for the harvest, Marise?"

She, too, was thinking back, amusedly for the moment. "Oh, but I was spoiled!" she said. "I had been overloved. I thought the whole world adored me as my parents and grandparents did. When I went down a street I supposed every one was thinking, 'See that dear, fresh young girl with her skates!'" She laughed. "And, of course, I thought that marriage would mean a rapture of loving sympathy from morning until night. Poor Arnold—I can see his side of it, you know. My demand must have been a frightful annoyance to a man who—well, had rather a keen eye for flaws."

Hugh's face had grown dark. "Mean little hound!" he muttered.

"Oh, yes. What he did was beyond all defense." Then, for the first time, her smooth surface was broken and the old passionate question leaped out: "What did he do with Mary—where did he take my baby? He had been gone only two nights; he could not have taken her very far. He was frightening and punishing me, but he would not have done anything to hurt her." She started to her feet, walking swiftly past him, her hands twisted together. "Why, he loved his baby, after his fashion. And she was not there in the wreck, she was not. I can be absolutely certain of that—oh, thank God, I went and looked myself, I didn't trust any one else. I climbed over every inch of those broken cars. I saw every foot of track—oh, they were so good to me, those rough men—They lifted everything, brought me any least scrap of cloth, in case it might be a clue. And I found all the people who had sat near him—hurt and dying, some of them, but all swore that he had been alone. And Arnold lay there, dead and couldn't tell me. I could have killed him again for that blank silence. Oh, Hugh, was there ever anything so baffling?" He did not speak, and presently she came back to her chair, seating herself with measured deliberateness, taking her hands into a quieting clasp. "I must not, I must not," she said. The words had a sound of old habit. When she spoke again, the passion was gone; her voice was only very tired. "I don't like your fable," she said. "For the man never found his pot of gold. He only got crops. Don't wish that for me."

"I must."

"No, Hughie."

"How can I help it, dear, when I feel that finding your treasure would be the blackest misfortune that could happen to you?"

"No. No misfortune on earth could wear on me like this eternal question. I never hear any one say 'Mary' on the street that my heart doesn't—She was so particular about her name, funny little person! 'Not baby—Mawy.' That is all I have to find her by. I have lost her face—I lost it years ago. From looking so hard, I suppose. I can see Arnold any moment—he was handsome, you remember, in a surface way; but I haven't seen my baby's face in ten years. I try and try—I can't get it back." Her eyes fixed on the picture beside the chimney and she forgot her guest until his sighing movement roused her. She turned to him with a new note, a clear little laugh of contrition.

"My dear Hugh, if this is what happens when we dine alone, I shall get back Luly in the morning," she exclaimed.

"Now, of course, you are going to hide again;" he spoke savagely. "For God's sake don't be stingy—if you give a confidence, don't immediately try to get it back!"

She still laughed. "What I have probably given you is a totally false impression. I don't live at such high tension—one couldn't after sixteen years. I am a very busy, cheerful person, most of the time. Years take the anguish out of any earthly experience if you are willing they should. Generally we aren't willing, you know—we are sentimental, and cling, and pretend, and imitate our own past emotions. That is a frightful temptation to a woman. But I have been learning honesty from you, Hughie. It is your most maddening trait, and yet I can't help trying to acquire it."

He was troubled, not knowing whether to accept her as she was now or as the tormented soul of a little while ago. Frowning at her brought nothing further, and he presently gave it up.

"Well, I'd better go," he said, rising reluctantly. "When may I come again?"

"Oh, I will call you up," she said, and so he went away cross and curt, but, ten minutes later, his voice came back over the telephone. "I think I neglected to say good night, and to thank you for asking me," he admitted meekly. "Good night, Marise. And I do thank you."

"Good night, Hugh." Her voice smiled. "Stay good if you can."

"I'll try. And—why couldn't I come next Sunday?"

"I will call up."

"Oh, you—!" And the telephone was abruptly cut off.

If Hugh Le Baron could not tell which was the real Marise, the reasonable woman who laughed at him or the tortured one who wrung her hands, neither could Mrs. Jaffrey herself. Into her most controlled and sensible moments the old hot cry could always burst. When she was alone that night, though there had been no preliminary gathering and rising of tears, though she had even gone up-stairs smiling over Hugh's final leave-taking, she suddenly found herself sobbing.

"There is nothing new to cry about, and it does no good," she argued, and, while the lights were lit, long training kept the shaken body obedient; but in the darkness her defenses fell and the past took possession.

It began sharply when she was eighteen. Before that lay a golden blur, a girlhood irradiated by love in a beautiful home. Then the city, spreading uptown, had swallowed the old house, and in the same year Arnold Jaffrey, meeting her at her coming-out ball, had swallowed Marie Louise James as easily.

He was not a bad man, Arnold; indeed, he led an exemplary life. He had a mean little soul, but when he did mean little acts, he found exalted reasons for them. The loving impetuous girl, recklessly generous, trustfully indifferent to her own advantage, yet expecting the same lavishness from him, unconsciously gave him daily the measure of his own nature, and his inflamed vanity had daily to argue away the discrepancy, to prove that all her rich qualities were in reality faults and flaws. The nagging logic, the eternal snub and suppression, had at first utterly bewildered Marise, who had never in her joyous life received a criticism that was not wrapped in tenderness. For a while she tried wildly to be whatever impossible thing it was that he was demanding. Then, as his demands only increased, there was revolt, storm, occasional lightning flashes of truth that showed Arnold to himself as he was, a sight never to be forgiven. It was after such a revelation, one black day, that, with the highest motives, he had removed their little girl from her mother's house. The word "separation" had been flung in his face.

"I am not going on with this. I have done my human best, and you're not worth it. Father will tell me the way out," Marise had cried, pinning on her hat for immediate action.

Arnold of the exemplary life had quailed before the threat of public trouble. How he appeared was the one real passion of his life. He did some very swift thinking as his wife left the house, and then he acted in the best interests of society and of his child.

Marie Louise had gone down to her father's office at the other end of the city, taking her trouble to him for the first time in three bitter years. They had talked long and intimately, and then he had come home with her, his dear face full of her trouble, and they had gone to the nursery together. Neither Mona, the new nurse, nor little Mary was there, and Mrs. Jaffrey summoned the housemaid.

"Why, Hannah, where is the baby?"

Such simple, ordinary words to carry burnt into one's flesh! And then Hannah's surprised, "Wasn't she to go with Mr. Jaffrey, m'am? I thought he said—"

The next clear thing was Arnold's letter on her dressing table. He had taken this step only after the most careful and painful deliberation. Marise was hysterical, not the wisest person at the moment to have charge of a child. If she was bent on leaving him, she must go without their little girl, to whom he had in no way forfeited his right. He thought it best—and in the long run kindest— to take little Mary away for a few days, that his wife might see for herself what life would be without her. He would communicate presently and give her a chance to show that she had come to her senses. It was a patient, forbearing letter, excellent to produce in court, and he had kept a copy.

They had tried, quietly, to find where he had gone, but it had seemed best to avoid publicity and wait. And then, two days later, Arnold Jaffrey had been lifted, dead, from the wreckage of a Long Island train, and the whole country had joined in the search for little Mary Jaffrey and Mona Molloy, her nurse.

After that life was a nightmare of journeys and false clues and interviews and cruel letter from cranks and sentimentalists and fresh hope that ended always in fresh despair. Mona Molloy, traced back for eleven years, was proved to have led a life as exemplary as Arnold's own. All Arnold's money went in the search, and Marise's heritage would have followed if her father, dying eight years later, had not left the principal securely tied up. That act of his, showing that hope was really gone, had broken something in Marise. She was ill for a while, then came out quieter, different. She seemed to have accepted her loss, for she made no more direct search, and her quests among the poor were ostensibly only to find out how she could help. Nevertheless, her work against child labor had been done when Mary would have been under fourteen; since then she had worked over factory and shop legislation and decent amusements for young people. In the last year—Hugh Le Baron had seen it with a shudder—she had begun to work for the present help and future salvation of girls who had fallen. She had gone a long way from her sheltered beginning, for she had learned to stand spirit to spirit with any living being, open and unshrinking; but it was a significant fact that not one of these girls who responded would have dared to lay a hand on her hand uninvited or a head against her shoulder. Her spirit mothered them, but not her body, and they knew it better than she.

Body and soul, that night, Marise mothered her little girl, giving herself up without stint to the forbidden emotion, and when common sense tried to interfere, she drove it off with a passionate. "I have been good for so long! I am going to have her this once!" When at last she slept, the little girl in her arms became so real that she said to her in surprise, "Why, my baby, I thought you had been lost. Have you been here all the time?" And the baby said, "A-a-all a time!"—drawing it out in her funny little way. So Marise, exquisitely light-hearted, set about telling Hugh and every one what a mistake had been made. But presently doubt came, and she said piteously to the baby, "Ah, I have dreamed this so often! Are you sure it is real this time?" Then the baby slipped out of her arms, and she was awakening, and once more it was not real. After a heartsick effort to creep back into the dream, she accepted her lot and faced the day.

"Good préparation for two hours with a secretary and a board meeting," she told herself, her palms pressing her hot temples.

She was late, and the secretary was there when she came from her bath, so she slipped into a dressing-gown and dictated letters over her breakfast table in the little sunny study where she kept filing cabinet and typewriter and her big official desk. When Hannah brought word that a woman was asking to see her, she was loath to be interrupted.

"Didn't she give a name, Hannah? What sort of woman? Are you sure she is not an agent?" But when Hannah explained that it was a "working woman," she arose at once, drawing her lavender and lace indifferently about her. It was Hannah who saw to it that her dressing-gowns were befitting her position. Her closets had been full of such things once, and Hannah still found treasure of lace and embroidery in the old finery. Mrs. Jaffrey looked a very grand lady indeed as she put back the portiere of the drawing room with a half bared arm and stoood still in her surprise.

Her visitor was a very large woman, not stout, but enormously ample, a super-woman with a broad madonna brow over Celtic gray eyes and hair still bright auburn, though she must have been well into the fifties. She looked big-hearted, too—everything about her was big, perhaps even her temper; those great arms suggested that they could have hurled things in their day. She rose from her chair, up and up till Mrs. Jaffrey had a humorous desire to cry "Stop!" and came in some haste to a seat, that the other might be reduced again to more probable proportions.

"Do sit down," she urged. "You wanted to see me?"

"M'am, I do." The rich voice hesitated, betrayed trouble, yet evidently not trouble of her own. There was even an air of majestic success about her. If she wore boots that bulged at the joints, it was plainly because she found them more comfortable at that stage, and the self-respecting black hat seemed to say that she had found nothing in more recent styles that suited her as well. Her gloves might have been bought for the occasion, they were so shinily fresh, so unexplored at their pinched tips. The high cheek-bones and certain intonations in the voice had lumped her for Hannah with those who have alternate Thursdays and Sundays off, but Mrs. Jaffrey's more subtle observation recognized an independent householder.

"Mrs. ———?" she suggested. That helped.

"Mrs. Healy, m'am. My girl, Mary Healy, was to a Christmas entertainment here a year ago—you'd not remember, you had so many. But my Mary, she came away saying, 'If ever I can help that lady, who's been so good to all girls—' " Again she encountered difficulty.

"And she thinks she has come across something?" Mrs. Jaffrey asked, so simply that the other relaxed gratefully into explanation.

"Mary's a real sensible, steady sort of a girl; she's got character, if I do say it. They think the world of her down at the office. And when she first got wind of this girl I'm telling you about, she says to me, 'Mama, my heart's all swelling up fit to burst with romance, but I'm going to keep my shirt on,' she says. You'll excuse the expression. There's so many boys after Mary that she does pick up their language. But she's as refined as a princess underneath. She—"

The faintest gesture of Mrs. Jaffrey's hand accepted all Mary's qualities and sent the narrative on again.

"Well, as I was saying, she run across this May Laguna when May was out of a job, like she generally is, and Mary says to her, 'May, you're about as fit to take care of yourself in a city as a three days old kitten,' she says. That's Mary, you know. She'll say anything to anybody. Even when she was a little tyke, she was never afraid of any one, high or low. I don't mean she's fresh—you wouldn't find a more modest-appearing girl, for all she's such a leader. But she does come right out with what she wants to say. It's like she knew she was as good as anybody, but was kind of used to it and didn't have to keep rubbing it in, like some of these girls do."

"I understand," said Mrs. Jaffrey, and again the narrative progressed.

"'A three days old kitten,' she says. 'Why don't you go home to your folks?' 'I haven't got any,' says May. 'I'm the door-step brand.' Well, that set Mary to thinking, and she got the story out of May quiet like, as if for no reason at all. And then she says to me, 'Mama, there may not be a thing in it, and I'm not going to give May any tip, but Mrs. Jaffrey ought to know that there's a girl about my age that was left on a canal boat when she was two years old.'"

Mrs. Jaffrey searched the past with unemotional attentiveness.

"I don't remember any canal-boat baby," she said, "but no child of two could have been picked up that year without my hearing of it. I went and looked at every one."

"Yes, m'am. I suppose you did. I never rightly knew your story, for my Mary was down with the scarlet fever about that time—I nearly lost her—and for weeks I wasn't caring about the newspapers. But these were ignorant, low, foreign people, these Laguna—they couldn't read or write; and when the little thing was dropped on board one night while they were tied up, they just naturally took her along in the morning like they would have taken a pup. The wife was a real kind woman who'd lost her own baby. It wasn't till after she died that things got—" She broke off, and Mrs. Jaffrey's nod of understanding carried them past that chapter of Mary's fortunes.

"I am always ready to see any girl," she said impersonally. "This does not sound to me— However, I should like to meet the girl. Your Mary has been very kind."

"Ah, she's the best girl in the whole world!" Mrs. Healy welcomed back her topic. "And that sensible! 'Mama,' she says, 'if Mrs. Jaffrey would just let me bring May in some evening without saying nothing—it might be she knows of a job May could get, and we'd talk of that while Mrs. Jaffrey looked her over.' "

Marise started up as though some uncontrollable repulsion had for an instant the upper hand. Then she brought herself back and expressed warm thanks.

"Won't your Mary come in with this girl tonight?" she went on. "I am sure I could help her to find work. What hour would be convenient?"

"Eight o'clock, m'am? Mary don't get in from the office till six, and she always likes to clean herself before she has her dinner. Company or no company, she wants to be sweet as a rose, always. Even when she was a little thing, it was, 'Mawy's dess a-a-ll dirty!' if she so much as—"

Mrs. Jaffrey had winced; then she smiled brilliantly, breathlessly. "Yes, they do say—that," she asented, and tacitly hurried her guest out. In the darkness of the hall she stood for a moment with her forehead pressed between her palms. Then she want back to her dictation.

(To be continued)

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Our Experience Pool

(Concluded from page 237)

much importance to what the owner says about his tractor. In this section we have men who are sick of their tractors and want to dispose of them. In many instances all one has to do to get the other side of the tractor is to step across the road or merely climb a line fence to another farmer who will declare his tractor is making him money and he would not think of parting with it. Now, such difference of opinions is certainly something to consider when one feels his temperature rising and sees tractors in his sleep. For quite a while I attributed this flighty talk to faulty tractors, yet I continued watching and observing. Briefly speaking, I am fully convinced today, after carefully observing various types of tractors under various farm conditions, the principal part of this great tractor controversy is a faulty purchaser and a faulty driver if they be two separate and distinct beings, or a faulty purchaser and driver if he be one and the same. First, my observation leads me to believe entirely too many farmers are trying to adapt their farm to a tractor, instead of trying to adapt a tractor to their farm. Second, too many farmers are looking upon the present-day tractor as a machine as easily cared for as a binder, mower or gasoline engine. In every single instance, to my knowledge, where a tractor has been carefully fitted to individual farm conditions and well cared for by an experienced mechanic, it is doing good work profitably for the owner, at a reasonable up-keep.

My nearest neighbor purchased a well-known make of tractor last season. Almost from the first it made him trouble. He burned out bearings innumerable, till he became disgusted. Finally someone discovered he was using a lubricating oil entirely unsuited to his type of tractor. He again overhauled his bearings, changed oil, and that ended his troubles.

The tractor is right here to stay, but before we can expect to profit by its use we must fully realize it is to be had in a number of puzzling styles and designs and is one of the hardest machines to select and give intelligent care known to the civilized world at the present time.

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The Practical Farmer

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The Next Year's Wheat Crop

By A. E. GRANTHAM

"SHALL I sow my usual acreage of wheat this year?" "What are the prospects for a profitable price next season?" These are questions which are uppermost in the minds of wheat growers at this time. Since the close of the war everyone has been expecting the prices of commodities to return to something near their former level. At present there seems little probability that wheat will be lower next July than it is at the present time. The Bureau of Crop Statistics of the United States Department of Agriculture shows in its July report that the probable yield for 1920 for all wheat will be about 809,000,000 bushels as against 940,000,000 bushels in 1919. In 1918-1919 there were seeded 72,000,000 acres, and in 1919-1920 only 52,000,0000 acres. The average price of wheat in the United States on July 1, 1920, as reported by the Bureau of Crop Statistics, was $2.53, while on July 1, 1919, it was $2.22, or a difference of 31 cents per bushel. At this writing (July 26th), new wheat is selling for $2.75 to $2.90 per bushel upon delivery, or at least 50 cents per bushel above the price last year.

Foreign dispatches from Australia indicate that the wheat crop is very short in that country this year, and that it may be necessary to import grain in 1921. New Zealand is said to have only one-third of the yield of last year. It is stated that Argentina has about one-half the amount of wheat for export that was expected.

In view of these conditions it does not seem probable that the price of wheat in September, 1921, will be any lower than it is at present. Furthermore, it would seem unwise for the grower to lessen his acreage to any great extent, since wheat fits in so well with most systems of farming. The labor required in growing and harvesting the crop does not conflict with the operations on the general grain farm. If the farmer is to get the best pay for his time it is necessary for him to have his labor distributed more or less evenly throughout the season. You will now and then hear men say that there is no money in wheat growing, and were it not for the fact that they need straw for bedding live stock, and a nurse crop for clover, they would not sow wheat. They fail to realize the fact which farm economists have pointed out, namely, that for labor expended in growing the crop, wheat pays better wages per hour than any other crop except hay. Wheat is not an extensive crop, and for this reason it cannot compete with truck, or fruit crops in returns per acre on high-priced lands, or on small farms; however, for the number of hours actually employed in the production of an acre of wheat the returns are as good, or better than, for any other farm crop.

Where the farm is a fair size (120 acres or more), wheat may well be included in the crop rotation, since it aids in the distribution of labor throughout the year. The straw is also an important item where considerable live stock is kept. Even during the times of low-priced wheat many farmers grow the crop largely because of its service as a nurse crop for grass, and for the straw produced. However, a fair acreage of wheat is required on the farm if the necessary machinery for handling the crop is profitably employed. Whether wheat shall be grown as a regular crop will depend upon several factors, namely, the size of the farm, the value of the land, and the necessity for a better distribution of labor.

My! But they're good!! Both for the consumer and the grower—for prices are good, too

SOILS.

Wheat will grow on a variety of soils, but the best yields are made on a clay loam that is fairly heavy, firm, yet friable and well drained. The subsoil should be fairly compact, but it should not be so dense and heavy as to prevent the passage of water. The light sandy loam type of soil with a fairly stiff subsoil, will, if properly managed, often produce paying crops of wheat. While all types of soil cannot be modified by treatment to produce wheat proportionately as well as corn, yet most soils, if given the proper attention, are capable of growing a good yield of wheat.

The difference of the wheat producing capacity of heavy and light soils is largely due to the fact that the lighter or sandy soils are less retentive of moisture and plant food—a defect which may be considerably remedied by stocking the soil with humus or vegetable matter. Drought is likely to injure wheat on sandy soils; and winter killing, from heaving out, on clay types. If the soil is well supplied with organic matter these extremes are avoided, with the result that the yields fluctuate less widely; hence, the importance of crop rotation.

ROTATION.

The important factor in producing satisfactory yields of wheat is a proper rotation of crops. Wheat should not be grown two years in succession on the same land if the best results are to be secured with all the crops in the rotation. It is thoroughly well established that the most profitable yields are to be secured through a series of years only when some legume is included in the rotation. On some soils red clover is admirably adapted, while on others legumes, such as soy beans, cowpeas or crimson clover can be used to better advantage. On soils that are depleted or of low fertility only one legume crop in three or four years is not sufficient to supply the needed organic matter. Sandy soils can be made more compact by the use of a green manure crop, thus increasing not only the moisture-holding capacity of the soil, but also adding largely to the nitrogen supply.

There are other reasons why a rotation is desirable for the best results in growing wheat. One of these is that the injury caused by insect pests and fungous and bacterial diseases may be avoided or materially lessened. Another feature for crop rotation for wheat is that the field may be made to pro-

duce two or three crops in succession with but one plowing of the land, whereas, if the wheat is grown continuously the land must be plowed each year. There are many types of rotation of crops, and the one to be adopted will depend very largely upon the kind of farming, the price of the various farm products and upon the nature of the equipment and the amount of labor employed. A three-year rotation of corn, wheat and red clover is better for wheat than a four-year rotation of corn, wheat and red clover. A good rotation for soils of a light character is corn followed by crimson clover, which is followed by hay, or turned under, soy beans for seed or hay followed by wheat and red clover. Cowpeas may be substituted for soy beans in the rotation. It will be noted that three legume crops are given in this rotation of four years, a factor which should make for rapid soil improvement. In case wheat is grown for two years in succession on the same land the first crop of wheat should be followed by cowpeas to be cut for hay, or turned under in time for second crop of wheat. A three-year rotation of corn, soy beans and wheat may be used in which crimson clover may follow the corn and the wheat stubble may be followed by crimson clover. The clover is turned down the following spring for corn. This kind of rotation may be used on soils where it is difficult to secure a stand of ordinary red clover. A two-year rotation of corn and wheat may be of value in some sections, particularly on farms where a portion of the land must necessarily be kept down in grass for a period of years. In this case the wheat stubble may be sown to crimson clover, and plowed down next season for corn. The corn at the last cultivation may be seeded to cowpeas which in turn are plowed under for wheat.

However, cowpeas are not always successful when sown in corn, owing to weather conditions, but crimson clover follows wheat to an advantage. Another four-year rotation which does not include soy beans or cowpeas, is corn, oats, wheat and clover and grass mixture for the fourth year. In the Middle Western States it has been found that the best yields of wheat are secured following red clover. However, farmers generally prefer to follow a sod with corn. For this reason a modified rotation is practiced in some sections, consisting of corn the first year, wheat or oats the second year, in which is seeded clover or grass, third year clover or mixed hay, fourth year wheat in which is seeded clover and grass, and the fifth year the land may be turned for corn, or the clover allowed to stand or be cut for hay. In the latter case the rotation consists of five years. In this way it is possible to have wheat follow red clover directly. Potatoes are a desirable crop with which to rotate wheat. Potatoes, wheat and red clover is a three-year rotation in which the fertilizers applied for potatoes make for a good yield of wheat, and especially clover. Potatoes may be combined with corn in a four-year rotation of corn, potatoes, wheat and red clover. In case it is not desirable to handle such a large acreage of potatoes, sweet corn, soy beans or cowpeas may occupy a part of the land along with potatoes during the second year of the rotation. The value of this rotation may be increased by the use of crimson clover, to be sown in the corn at the last cultivation and turned under for the potatoes.

The most profitable use of legume crops necessitates the keeping of sufficient live stock to utilize the leguminous forage. On a depleted soil all legume catch crops should be turned under until the soil is somewhat built up.

(Concluded on page 244)

Why Farmers Sell Out

CLIFFORD E. DAVIS.

AFTER long years of close observation, I find that the reason why most farmers sell out is *not* lack of farm help, nor low prices, nor yet overproduction; but simply because, as one farmer put it, they are not "stuck on the job." That is often the root of the whole matter. They are farming, not from a love of country life, or of the art of farming, but for a living and to get along. The man who tries to farm, whose heart is not in his work, whose "wits are wool gathering," yearning for city life and excitement, ease—and big expenses—is doing a half-hearted job that results in meager crops and tedious days. Take the man who really likes to farm, and who would raise a crop in an 8x10 back yard if he had no more soil, and mark the difference. You never hear him grumble at the long rows or the big fields. He goes at the weeds with joyous vigor, and really rejoices over each day's work well done. He appreciates the song of the birds, the ozone in the morning breeze, and even the lowly dandelion. He knows that tired limbs make sound sleep and good appetites, and the very smell of the earth seems good to him. He is so careful of farm finances that he doesn't run into corroding debt, nor to frivolous expenses. To him the planting of each seed is a pleasure, its culture a joy and its reaping happiness. He tries to learn all the intricate ways of his trade, and for him nature unfolds all her secrets, for "Nature never did betray the one who loved her." Drive such a man off the farm? You couldn't do it with a pile driver. And it is a very good thing for those who like their three meals each day that it is so. The second and third grade farmers quit. The first grade, simon pure, valley tan farmer *never* does.

Maryland.

The wheat experiments at Snow Shoe, Pennsylvania

Above are three photographs of the wheat plats at the Snow Shoe Experimental Field, made June 7, 1920. They have in them a lesson of interest to a large proportion of farmers in this section. There are 15,000,000 acres of this De Kalb soil in Pennsylvania and while not all of it is as poor as the Snow Shoe farm originally was, most of it will benefit by the treatment which produced the best results there. The plat shown in the upper photo was given neither lime nor fertilizer. The second plat shown was given 3 tons of limestone and 400 lbs. of acid phosphate to the acre. While the lower plat had the same amount of limestone and complete fertilizer. The results speak for themselves.

(Photos by courtesy of Penna. Experiment Station).

Combating Poultry Pests

J. RAYMOND KESSLER.

IN a general sense poultry pests are, I believe, more numerous on the average small farm flock than on the flocks of the commercial plant where poultry is the chief product. The reason for this is the lack of sanitation, and in many cases absolute indifference to methods of prevention. Commercial poultry farms cannot afford to treat the pest question with indifference, since in a very short time the plant would become a death-trap for the fowls and the rearing of young chicks an impossibility.

Of course, on large plants where all eggs are hatched in incubators and the chicks reared in brooders, never coming in contact with hens, there is less chance of infection, but this by no means overcomes the trouble nor does away with the necessity of preventive measures. In fact, poultry pests might be included in the same class with the potato bug; where there are potatoes the bugs usually appear. Both pests, however, by proper methods, can be kept down to a point where their damage is negligible.

Of the numerous pests attacking poultry, lice and mites are the most common, and the ones that cause the most trouble. A majority of old hens will be found to have a few lice, even if preventive means are practiced, but this is no reason for allowing the quarters to become overrun with the pests. Flocks of young birds artificially raised, with reasonably clean surroundings will frequently show no signs of lice until a year or more old, providing they do not mingle with old stock.

Sparrows and pigeons frequently introduce lice where a flock is uninfested. Some investigators of the subject claim that each tribe of the bird family have their own particular variety of lice, which will not live on fowls of another family. However, a majority of experienced poultrymen are of the opinion that sparrows and pigeoens do carry lice into the poultry stock.

There are two well-known classes of lice found on poultry, commonly known as the chicken louse and the head louse. The chicken louse, the smaller of the two, attacks chickens of all sizes. They live on the secretions of the body, feathers and skin. The female louse lays her eggs on the fowl, cementing them fast to the feathers near the skin. The eggs hatch in about ten days, and in a very short time the young breed and propagate more. One pair, under favorable conditions, will easily breed thousands in a few months, and if allowed to multiply, will often become so thick as to cause death, particularly in young birds and sitting hens.

The best way to fight lice on the hens is by the use of a good dust powder. There are some excellent preparations on the market for this purpose, and where a small quantity is needed it is cheapest to buy the ready-prepared mixture. A good powder can be made from equal parts air slaked lime, flowers of sulphur, tobacco dust and road dust, well mixed. This material must be dusted over the hens, since a box filled with such a mixture will not attract the hens to dust themselves. The bird to be dusted should be held by the feet with the head down,

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AUGUST 15, 1920

Why Motor Trucks?

IF you were asked the question, "What is the greatest advantage of owning a motor truck?" what would be your answer?

The United States Department of Agriculture put this question, this past winter and spring, to 753 farm owners of trucks in the Eastern States, and 91 out of each 100 replied, "Saving time." This is very significant in view of the fact that when motor trucks and tractors were first introduced the big argument in the minds of many—probably the majority—was that they would reduce the number of horses which must be kept on the farm. On the contrary, 50 per cent. of these farmers report that they have not cut down the number of their work stock by so much as a single head, while less than one man in ten has cut down his work stock more than two head. About four-fifths of the men state that their trucks decrease their expense for hired help, the average estimate being about $324 per year.

There are two ways to make money by taking advantage of improved machinery and methods which save time and thus "reduce expenses." One of these is just to do the same work with less help; the other is to do more work with the same help.

A tractor salesman who had studied the farming requirements of a prospective customer put the matter to him about right when he said:

"The way I figure it you could dispose of about half your horses and still do the same work you are doing now—do it easier, quicker, better and at less expense. However, I believe it would be better to keep all your horses and take over the adjoining farm, which the owner wants to sell or rent because he's getting too old to run it himself.

"With one of our tractors you could not only do all the work on your own place, but on another farm besides, without increasing the number of men you employ and without taking any more time than you have been spending on your own place. At the end of a few years I believe you'll agree with me that the additional income will pay for the tractor and the tractor implements, leaving you a good profit on your investment."

Speeding up production is the great need of the hour, and this report is an instance that this is just what the farmer wants and is trying to do. It must be borne in mind that useful production implies the means of distribution. The tomatoes, peas and beans which rot in the field or in the railroad station do neither the farmer nor the hungry family in the city any good. The transportation situation these days is very troublesome, and in many ways critical. It will probably be a long time before the supply of cars and the railroad facilities will be sufficient to take care of our needs. The farmer who can place his own produce in an advantageous market by motor truck is not only serving his own interest, but is rendering a service to the whole country by releasing for other purposes transportation facilities which he would otherwise require.

A Good Practice

THE Gypsum Industries Association has recently granted fellowships to New York State College of Agriculture and to the State College of Agriculture in North Carolina, in addition to three fellowships already established in western colleges for the purpose of investigating the value of gypsum as a crop food and manure preservative.

We are glad to note the increasing practice of establishing fellowships and scholarships on the part of commercial interests engaged in the sale of agricultural materials. The great thought in modern business is service; not just to sell a man something which others have found profitable to use, but to sell him exactly the thing which he will find most profitable to use under his own peculiar conditions. It is a mistake to sell a farmer any material for use on his soil when his soil or his crops do not require it, or when something else could be used to better advantage, and such mistakes are costly to the seller as well as the user. We expect competent advice now days from the dealer or the manufacturer back of him, and poor advice is just as bad as a material that is not pure, or an implement that is defective. It is for this reason that most of the large companies have "service departments," whose duty it is to advise and help their customers.

The careful, painstaking experiment and investigation necessary to show exactly what gypsum, lime and fertilizer materials will do on certain soils, in certain climates and localities, for certain crops is best done under the direction of the agricultural colleges. The co-operation of industrial organizations in placing at the disposal of colleges the means for doing such work, is very praiseworthy and helps the cause of agriculture as a whole, even though the purpose of the fellowship or scholarship may be investigation along the lines of one certain material.

Cars for Fertilizers

THROUGH the combined efforts of the National Grange and the fertilizer manufacturers the car commission has issued an order giving preferential treatment to requirements for cars needed to carry fertilizers actually ordered for fall use. In this connection a letter sent by L. J. Taber, Master of the Ohio State Grange, to the Interstate Commerce Commission, undoubtedly had considerable effect. Mr. Taber stated that wheat farmers could not be expected to sow the usual acreage this fall unless they could get the necessary supplies of fertilizers on which they are dependent. This fact is a pretty direct corroboration of the statement of Washington Representative that "Next to the movement of foodstuffs themselves the most important problem before the railroads is the movement of the materials to provide for a future supply of food."

We have previously emphasized the extreme importance of getting your fertilizers as far ahead of time as possible this year. If you have already ordered and find the car service insufficient you should report the facts at once.

Shipping Grain

SO seriously is the railroad congestion blocking the shipment of grain from the West and Northwest to the seaboard that bulkheads, at considerable expense, are to be built into the thirty-five new government ships now lying in the upper great lakes, that they may carry a grain cargo on their trip to the ocean, where they are to engage in coastwise traffic. Their deep draught prevents them from carrying full cargoes, and out of the 100,000 bushels each, which is the limit, 80,000 bushels must be left at Buffalo to enable them to pass through the Welland canal. This will help a little, though, of course, it is only a drop in the bucket.

In many parts of the grain growing regions a considerable portion of last year's crop remains unmoved. The new crop is crowding storage space and much of this wheat the local elevators either have to refuse or can handle only at low prices. At the seaboard, on the other hand, prices are high and will continue so, undoubtedly, until transportation facilities become sufficient to deliver western grain as fast as it is required for use or for export; this is only a matter of time, of course, though no one can say how soon or how long it will be.

The question of whether it is better to sell now or whether prices will be higher later on, is always with us, but it is well to keep before us the present situation and what makes it so. The railroad congestion prevails here in the East, too, but opportunities for the comparatively short hauls are more likely to be presented. In many parts of our section there are local facilities, such as rivers and canals, by which to reach the cities and the seaboard. And then, where the distance is not too great, there is the motor truck.

More Horses Needed

A CHICAGO banker who is farm raised, and is the son of a noted breeder, has been making a careful study of the horse situation and sums up his opinion in this way: "I know that good draft horses reared in sufficient numbers to provide the farmer's own replacement needs, are one of the surest and safest investments in the world. Farmers cannot go wrong when they breed good type mares to high-class draft stallions—that's one sure thing."

During the past few years the breeding of horses has fallen off tremendously, owing to a number of causes, one of which, no doubt, was the mistaken idea that mechanical power would do away with the horse. The result is a great scarcity of foals and yearlings at the present time. Naturally a great shortage of work stock must follow in due course. There is a field here which we believe is well worth attention.

Bulletin Helps for Farmers

Four years ago the U. S. Dept. of Agriculture issued a bulletin on "Food for Young Children (Farmers' Bulletin No. 717), which has been immensely valuable to mothers everywhere This bulletin has just been reissued in revised form and is now ready for distribution. It not only covers the general principles that should govern the choice of food for children between 3 and 10 years of age, but it offers specific suggestions for meals made up of such food. Every farm mother of young children should have and use this bulletin.

"Sudan Grass" is the subject of Farmers' Bulletin No. 1126. Too few farmers in this section have an intimate acquaintance with this valuable emergency hay crop which many experts think far superior to millet in our latitude. This 27-page bulletin treats its subject quite exhaustively and is copiously illustrated.

Either of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

Thistle-pestered farmers should send to the New Jersey Agricultural Experiment Station (New Brunswick) for a copy of their circular No. 113, "Common Thistles." Pictures and information about the habits of the several species prevalent, with directions for their extermination.

Four new bulletins issued by the Maryland Agricultural Experiment Station (College Park) have recently come to hand. Three of them are of interest and value to poultry raisers—No. 233, "The Effect of Age of Eggs on their Hatching Qualities"; No. 234, "Earthworms—the Important Factor in the Transmission of Gapes in Chickens"; No. 235, "Capons vs. Cockerels." The fourth (No. 236) touches on "The Control of the Strawberry Leaf Beetle." Any of them may be had on application to the station.

Send $1

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Men—look here! No need for you to wear ready mades. No need for you to stand for high prices and pay all the money down for made-to-measure clothes. America's big tailor shop will make you a suit or overcoat of fine fabric in latest style to your exact measure, guarantee the fit and send it on approval for $1 down. Get our big Style Book and see for yourself that we are world beaters on style, quality, reasonable prices and liberal terms. The Free-Style Book explains our plan and shows how you get the snappiest styles and save money. Cloth samples also sent free.

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Mr. Wheat Grower—

Plan early for fall seeding — carefully prepare seedbed—arrange for fertilizer — *sow good seed wheat of the right variety—sow*

"Hoffman's Seed Wheat"

Grown in the fertile Lancaster Wheat Belt—known in every section for its hardiness—vitality—productiveness. Is reliable—means increased yields wherever taken to be sown.

Eleven Varieties—smooth and bearded sorts—graded—sound—clean and clean—*free of rye, garlic, smut, cheat, cockle.*

Shown here is the head of *"Leap's Prolific" variety*—yielded 35 to 46 bushels per acre.

Seed must please you—or may be returned and all money refunded. Prices are just. One bushel more wheat per acre will well repay you. Many customers report 10-bushel increase per acre.

"Hoffman's Wheat Book" *and samples free.* Write for them today. Mention this paper. *Hoffman's Seed Wheat will* please you and pay you!

A. H. HOFFMAN, Inc.
Landisville, Lancaster Co., Pa.

The Next Year's Wheat Crop

(Concluded from page 242)

SOIL PREPARATION.

The kind of soil preparation necessary for wheat will depend largely upon the previous crop and the nature of the soil. Where wheat follows corn it pays to thoroughly cultivate the corn crop, keeping the land free from weeds throughout the summer. When the corn is removed the land should be well disked and leveled with a spike harrow. This leaves a firm seedbed with a loose mulch on top. Plowing the land for corn is not necessary unless very weedy, and is often injurious, as the soil is left too loose. The common practice of plowing the land after corn often delays the seeding so much that the wheat plant does not get sufficient growth to pass the winter in good condition. A disking of the land would lessen the labor and the seeding might be done earlier.

The labor necessary for compacting the soil after plowing is often as great as the preparation by disking. Where wheat follows potatoes, tomatoes and other hoed crops, disking and harrowing will fit the land satisfactorily. After soy beans or cowpeas the ground may be put in good condition by harrowing. If wheat follows wheat or oats the land should be plowed early, the earlier the better, provided the soil is harrowed after each rain. In this way the firm seedbed is formed and the moisture retained. Risks are taken by delayed plowing, as late summer or early fall droughts may cause some extra expense and preparation of land, to say nothing of the less favorable soil conditions. Where cowpeas and clover are to be plowed under for wheat it should not be turned until considerable clover is secured. In any case, the plowing should be done early enough to allow thorough preparation of the soil. The ideal seedbed is firm, free from trash, and covered with a fine soil mulch 2 to 3 inches deep. The greatest importance is the preparation of soil for wheat, especially since the full growth of the wheat plant determines very thoroughly the condition in which the wheat will pass the winter.

FERTILIZERS.

The lack of proper fertilization is often the cause of poor yields of wheat. Most of the soils east of the Mississippi river are deficient in phosphoric acid; that element of plant food that is used so largely by the wheat crop. While the first consideration is a thorough preparation of the soil through crop rotation, certain applications of plant food are necessary to secure the best yields of grain. The use of legume crops in the rotation lessens the demand for fertilizers carrying a high percentage of nitrogen, and enables the wheat crop to use plant food to the best advantage. The soil must be kept in good physical condition as regards moisture, drainage and bacterial activity. Wheat responds more readily to the application of plant food than most other crops. This is largely due to the fact that wheat makes most of its growth during a comparatively short period, and consequently requires a large supply of plant food at that time. The plants act rather slowly in late fall and early spring, and are not likely to meet the demands of a crop for available plant food.

The kind and amount of fertilizers to use on wheat will depend on the previous cropping, and to the land and its natural fertility. No rule can be laid down as to what fertilizer formula can be best for wheat on all farms. The farmer can judge best of the soil requirements provided he knows how the soil has been managed in the past, and has noted carefully the results obtained by the use of various fertilizers. However, there are some general principles which apply to the fertilizer requirements of wheat. On Eastern soils wheat responds rapidly to the liberal use of phosphoric acid. The Delaware Station experiments show that phosphoric acid when used alone produces a larger increase than either nitrogen or potash used singly, indicating that the soil is deficient in phosphoric acid. This does not mean that nitrogen and potash are not necessary for the best results; it is only when the three—nitrogen, phosphoric acid and potash—are supplied in the proper amounts, either by the soil or by the grower, that the maximum yield will be secured. On depleted soils it will be necessary to supply all three elements of plant food. Where the land has been carefully rotated with legumes, and the legume precedes the wheat crop, only phosphoric acid and potash are greatly needed. Experiments at the Delaware Experiment Station show that under the above condition nitrogen rarely pays. Where the land has not been kept up by rotation a liberal use of nitrogen in the fertilizers will pay. In some sections in the East it has been found that the most profitable results are gotten from fertilizing wheat with acid phosphate alone, where cowpeas have been turned under. A general fertilizer formula for wheat should carry 2 to 4 per cent. nitrogen, 10 to 12 per cent. phosphoric acid and 2 to 5 per cent. potash.

TIME OF SEEDING.

The best time to sow wheat will vary with the latitude. Early seeding is to be avoided if there is danger from the Hessian fly. A good rule to follow is to avoid seeding before the average date of the first frost. The time of seeding will also vary somewhat with the character of the soil. On fertile land well prepared, wheat may be sown later than on a poor land badly fitted. In any case, seeding should take place early enough to allow the plants to become well established before winter. Winter-killing and heaving out are greatly lessened by a thrifty growth of wheat before freezing sets in. The proper kind and amount of fertilizers and the moisture conditions of the soil will determine, generally, the lateness of seeding. Experiments conducted at the Delaware Station have shown that wheat may be seeded three weeks later on well fertilized soil than on the same type of soil not well supplied with plant food. In every case as good results were secured from the late seeding on good soil as from early seeding on poor land.

RATE OF SEEDING.

The quantity of seed per acre for the best results will depend on the general conditions, such as the fertility of the soil, the condition of the seedbed as to tilth and moisture and the size and quality of the seed used. On a well prepared fertile soil with a medium sized seed of good quality, 6 pecks per acre is sufficient. Under other conditions 8 to 10 pecks have been found profitable. In general, it is agreed that a little larger quantity of seed is required for late seeding than for early, and for poor land than for land in a good state of fertility. Wheat should always be sown with a drill, preferably a disk drill, if the land is a little uneven or covered with more or less trash.

Many experiments over the country have invariably shown better results from drilling than from broadcasting. The small ridges left by the disk drill favorably affect the winter condition of the plant by holding the snow, thus keeping away the effects of frost. On well prepared soil any drill will do the work, and on corn stubble land, or on trashy ground, a disk drill is much more satisfactory.

GOOD SEED.

Another important factor in increasing the yield of wheat is the selection of good seed. Experiments have shown that it pays well to use large, plump grains for seeding. A better quality of wheat may be secured by careful fanning and screening. Fanning and grading of seed also rids the wheat of many of the diseased and shrunken kernels, thereby lessening the chances of infection another year.

The variety of wheat is another determining factor in securing a high yield of grain. It is important to secure varieties of good milling qualities that stand up well, that are strong and less resistive to disease and that yield heavily. The experiments in variety testing at the Delaware Experiment Station have indicated that the bearded wheats are more dependable than the smooth varieties. This conclusion has been reached through a careful comparison of varieties when seeded on well fertilized soil the same season. The grower should consult his state experiment station regarding their opinion of the best varieties for his particular section. Doubtless many farmers are growing wheat of inferior and poorly adaptable varieties that are badly mixed, and through careless handling have deteriorated. The Delaware Station has found the Gypsy, Rudy and Red Wonder among the best varieties of bearded wheats, and the Currell's Prolific and Leap's Prolific the best smooth wheats. The latter variety has given excellent results wherever tried.

DISEASES.

The yield of wheat is often much lessened by certain diseases to which the plant is subject. One of the most important of these is "stinking smut," or "bunt," as it is sometimes called. This is a fungous disease which attacks the wheat kernel, turning the contents to a dark brown dust, a somewhat greasy, ill-smelling mass. These are the spores of the fungus. The disagreeable odor is generally noticed at threshing time, although affected grains will often pass unnoticed. The diseased kernel may be generally recognized by its particular color and the absence of a germ in the crease. The chaff of the wheat is not affected, and the grower will seldom suspect the presence of the disease until threshing,

Stinking smut not only destroys the grain, but lowers the value of the wheat on account of the disagreeable odor. The annual loss in the United States from this disease is estimated at eleven million dollars. Treatment with formalin will generally prevent the recurrence of stinking smut and will largely affect the stinking scab, anthracnose and other parasitic fungi.

The formalin is used in the following manner: Spread the seed on a clean floor, or canvas, and sprinkle with a solution of 1 pint of formalin and 50 gallons of water until thoroughly moist. Stir the grain repeatedly to distribute the moisture evenly, then shovel into a pile and cover with sacks or canvas for two hours. Spread in a thin layer to dry, stirring frequently. Canvas, drills and other receptacles should be disinfected with the same solution before filling with the treated seed. This treatment costs but a trifle in comparison with the benefits received. One pint of formalin when made up with water will treat 40 to 50 bushels of wheat.

LOOSE SMUT.

Loose smut affects the head of wheat by causing the chaff and grain to become a mass of black spores about the time the wheat is in blossom. No grain whatever is formed on wheat stalks thus affected. This disease can be successfully combatted by the hot water treatment, as follows: Place the seed to be treated in gunny sacks, filling each half to two-thirds full of grain and place in a tank or barrels of cold water for five hours. It is best to lay the sacks on their sides in the water. In the meanwhile provide two barrels, or tanks, two water pots, two large kettles for heating water, a tested thermometer and several gunny bags in which to soak the seed. Fill one barrel about half full of hot water at about 120 degrees F. and the other at 129 degrees F. Have at hand a supply of cold and of boiling hot water. Place the seed which has soaked five hours in cold water in gunny bags, about two pecks at a time, and dip for about a minute in the first barrel to bring the temperature of the seed up to approximately 120 degrees F., drain, dip for ten minutes in the second barrel, keeping the water constantly at 129 degrees F. as nearly as possible. Move the seed from one side of the sack to the other to insure uniform heating. At the end of ten minutes remove the seed and spread it to dry in a layer about two inches deep; stir to hasten drying.

Treated grain may be sown as soon as dry enough to run through the drill.

Delaware.

Combating Poultry Pests

(Concluded from page 242)

applying the powder with the hands. Start on the legs, then the fluff, breast and under the wings, turning the bird around to do the back and neck. Rub the powder in thoroughly, rubbing the feathers in the opposite direction of growth. It is best to have two persons do the dusting, one holding the bird by the feet, while the other holds the head with one hand over the eyes and dusts with the free hand. By holding one hand tightly over the fowl's head very little fluttering and squirming will be experienced. To be effective the dusting must be repeated in about three weeks, so as to catch the new brood hatched from the eggs on the fowl, which dusting cannot destroy.

Fumigation and spraying of the houses should be done at the same time, so as to exterminate the lice about the nests, roosts and cracks of the house. Where reasonable cleanliness and disinfection are practiced about the hen house, dusting of the hens will only be necessary at rare times. However, if the fowls are infested it is the only way to overcome the lice.

The average hen house dust box is not very effective, and rather infrequently used by the flock. Hens, if left to select their own dust bath, will pick a slightly moist dust instead of the exceedingly dry stuff provided in the average dust box. This moist dust, if we can call it dust, has the effect of cleaning off all scruff and dandruff from the fowl's skin as if it were washed. A clean condition of the skin is, of course, discouraging to the lice.

The large louse, known as the head louse, is found on the heads of small chicks, often causing death. Those hatched and brooded with hens are the greatest sufferers from these pests. Greasing the top of the chicks' heads with lard or vaseline, is most effective. A carbolic grease is very good. Only a small amount of grease is necessary, as the idea is to close up the pores of the lice and thus smother them.

Mites are of a different nature from lice. They are oval in shape, much smaller than lice, and multiply a great deal faster. They lay their eggs in cracks and around the nests and roosts of the poultry house. They attack the fowls by biting and sucking the blood, which gives them their red color. They usually carry on their operations at night when the hens are on the roost. Sitting hens are frequently their victims.

Where the houses are badly infested with either of the pests it is best to first thoroughly clean the house and burn all litter. All things, such as paper linings on the inside of the house, should be torn off and burned, and all protected places thoroughly cleaned out. After this is done the house should be closed up tightly and fumigated.

Chloride of lime and formaldehyde is one of the best disinfectants for the purpose. A pound of chloride of lime should be placed in a 20-quart receptacle, preferably a pan that is wider at the top than at the bottom, and a pint of formaldehyde poured over the chloride of lime. All persons should leave the house at once, as the two ingredients burn each other, making a very deadly gas which has proved very effective. The quantities mentioned should be used to every thousand cubic feet of air space; thus a house 20 by 15 feet, with an average height of 6½ feet, would require two pounds of chloride of lime and one quart of formaldehyde. In a house of the size mentioned, best results would be obtained by making two lots of material out of the quantity, placing them in different parts of the house. An open-top container of the size mentioned will be required for each batch of one pound and one pint, since in a smaller receptacle the matter will boil over. This gas will only prove effective where the house is tightly closed and the fumes allowed to remain within for at least six or eight hours. After using the gas it is well to paint all roosts and nests, also cracks about the house, with some good coal tar disinfectant. After this is done, spray the entire house with a solution such as creolin, using about a gill of creolin to each gallon of water Formaldehyde or carbolic acid used in about the same proportions, are also good. All parts of the house should be sprayed until the solution drips off. Where conditions were very bad this thorough method of disinfection should be repeatetd in about a month to catch the new brood. However, under ordinary circumstances the use of the gas once a year, and painting and spraying as above outlined once a month will keep the pest under control. Cleaning of the quarters must not be neglected. The method outlined, of fumigating and spraying, will also be found very effective as a preventative of disease, and helpful where sickness is present. It kills the germs and destroys bad odors.

The writer has known bed bugs to infest poultry houses and to one who never before encountered them they may prove a serious problem. It is not well known whether they annoy the fowls or not. However, being blood suckers, the odds are against them. At any rate they are most undesirable and must be destroyed. They multiply very rapidly and are great carriers of disease germs.

There are a number of solutions on the market for the destruction of this pest, but they mostly require that the solution touch the bug, which is not always possible in a poultry house, since to buy sufficient of most of such solutions for a poultry house would make the cost excessive.

The gas and sprays outlined are effective to some extent, but will not exterminate bed bugs. The best thing I have found is sulphur gas made by burning flowers of sulphur in pans, using about three pounds of sulphur to every 1000 cubic feet of air space. The best effect will be had by placing the sulphur in pans in pound lots about the house. To light the sulphur use a little wood alcohol poured over the sulphur, to which apply a match. The house should, of course, be tightly closed for half a day at least, to retain the dense smoke made by the sulphur.

All pans should be set where they cannot set fire to anything, since the flames will shoot up several feet. The pans should be set up off of wooden floors, on bricks, on account of the heat. Pans with soldered bottoms should not be used, as the heat of the burning matter is likely to open the seams, allowing the material to run over the floor and cause fire. This gas is very deadly, so care should be taken when opening the house not to inhale the fumes. The same thing holds good with the formaldehyde gas.

After the sulphur gas the house should be either painted or sprayed with kerosene. Kerosene is most effective because when bugs or their eggs come in contact with places sprayed with it, the oil spreads over the eggs or bugs, closing their pores and causing death by suffocation. It may be necessary to repeat the treatment in about a month.

Pennsylvania.

50 Eggs a Day

"More Eggs' Tonic is a Godsend," writes Mrs. Myrtle Ice, of Boston, Ky. She adds, "I was only getting 12 eggs a day and now I get 50." Give *your* hens a few cents' worth of "More Eggs," the wonderful egg producer, and you will be amazed and delighted with results.

Hens Lay While Moulting

During moulting your hens will need "More Eggs" to get them over the moult **quickly and easily**, to revitalize their organs and put them in fine laying condition. Just read the letters below telling how users actually **got eggs during Moulting!** You, too, can make your hens moult fast, get eggs sooner and more eggs all fall and winter. This scientific tonic has been tried, tested and proven by over 400,000 chicken raisers. Try Reefer's "More Eggs" on my iron clad **money-back guarantee of satisfaction.**

$1.00 Package FREE

If you wish to try this great profit maker, simply write a postcard or letter to E. J. Reefer, the poultry expert, C833, Reefer Bldg., Kansas City, Mo., and ask for his special free package $1.30 offer. Don't send any money. Mr. Reefer will send you two $1.00 packages of "More Eggs". You pay the postman upon delivery only $1.30, the price of just one package, plus cost of postage and handling, the other package being free. The Million Dollar Merchants Bank of Kansas City, Mo., guarantees if you are not absolutely satisfied, your dollar will be returned **at any time**, within 30 days—on request. No risk to you.

Read These Letters Showing Wonderful Results of "More Eggs"

First Time Hens Laid During Moult

I have used your "More Eggs" Tonic since last fall and can surely say it has amply paid me. I have had chickens for 7 years and this is the **first time they have over laid through their moulting season.**
MRS. C. LUGINBUHL, Norwood, Ohio.

Loafers Before, Layers Now

My hens have **laid through moulting this year.** It is the first since I had chickens. They have always been loafers until I used "More Eggs", now they are good layers.
MRS. H. J. SCHULZE, Pittsburgh, Kans.

Gets Eggs All Year

Have several friends that wish to use your "More Eggs" Tonic after seeing that I have been so successful in **getting eggs all through the year and moulting season.**
MRS. J. MEDARIS, Dale, Texas.

Send No Money!

Don't send any money; just fill in and mail coupon. You will be sent, at once, two $1.00 packages of "MORE EGGS." Pay the postman upon delivery only $1.30, the price of only 1 package plus cost of postage and handling. Don't wait—take advantage of this free offer TODAY! Reap the BIG profits "MORE EGGS" will make for you. Have plenty of eggs to sell when the price is highest.

$1 Package FREE

E. J. Reefer, Poultry Expert, C833, Reefer Bldg., Kansas City, Mo.

Dear Mr. Reefer:—I accept your offer. Send me the two $1.00 packages of Reefer's "More Eggs" for which I agree to pay the postman $1.30 (the price of one package, plus postage and handling) when he brings me the two packages, the extra package being free. You agree to refund me $1.30 *at any time* within 30 days, if *both* of these packages do not prove satisfactory in every way.

Name.....

Address.....

.....

More Ideas For, and From, Farm Home-makers

PRIZE LETTER

Water for Home and Barn

FLOSSIE RAY CRONK.

Being poor and just starting out to make our little home a place of joy and convenience, husband and I were puzzled more over the water problem than anything else. It seemed that there was so much to buy that we simply could not spare the price of a modern system. As husband expressed it, "we were blocked," and then I had an inspiration. "How far is it to the spring and how much up grade?" I asked Hubby. It was a silly question, for I had been making a dozen or more trips carrying two pails full of water from this spring each day for eight months, and I knew to an inch how steep the grade was.

"What has the question to do with the water problem?" quizzed Hubby.

"Pipe the water down to the house and barn," said I. And I continued, "After a while we will build a water tank right above our garden and then we can keep our garden sprinkled when it needs it most." It cost us just $58 to pipe this cool, pure spring water into the kitchen, bath and wash house and into the barn. I would not exchange our water system for the most expensive ones in the country. I hope this will help some farmer who wants a convenient water supply at little expense. There are thousands of farms with springs of pure water which can be piped to the house at very little cost. We hope to install a water tank near our garden, and the pressure from the spring will keep it filled.

West Virginia.

PRIZE LETTER

Proper Consideration for the Home Maker

MRS. C. S. FERRILL.

A tired, over-worked, unhappy wife or mother is one of the greatest drawbacks to a happy home of nearly any factor I know. It is the wife and mother that makes the home, and it is she, more often than any other member of the family, that is tired, overworked and unhappy. Sometimes she is tired and overworked for want of a good system in doing her duty, but often she is so from want of proper help and assistance from other members of the family. They sometimes forget, or fail to learn, how big her job is, how heavy her task, how sacred her duty; consequently they leave her with more than she can reasonably do. A lift here and there occasionally would help her wonderfully, and in helping her personally would brighten the home, in that it makes her more cheerful and lighthearted. Many times the home maker is tired, overworked, cross and unhappy for want of proper recreation. Often she entertains, but how is she entertained? Often she spends hours in a hot, stuffy kitchen preparing big dinners, refreshments, etc., for others, but how often are those things prepared for her special benefit? She sews for weeks and weeks for the daughter in order that she (the daughter) may have a happy vacation, but who sews for mother, or when does mother get a vacation? Often the family—all but mother—go for an auto ride, but she stays at home to rest, too tired even to ride a few miles through the country in an auto. When you come to think of it is it any wonder we wives and mothers (some of us, at least) become irritable and impatient, and that such effects the whole household in that we cannot perform our duty as well in such a condition? Then wake up and act.

Kentucky.

PRIZE LETTER

A Children's Home—Outside and In

MRS. LIDA MAY SMITH.

Being a lover of nature, and thinking there is nothing in comparison with God's free out of doors for our children's health and recreation, I place outside surroundings first.

There should be large, open, well-kept lawns, with ornamental shrubs and trees for shade; at back and sides flowers, etc., arranged so as to give the most pleasing effect to the whole front of the premises—thus children will unconsciously learn harmony and beauty of design—but placed so as not to interfere with the children's play. No restriction to freedom, but rather the spirit, "Go where you like, climb the trees and pick the flowers, etc." Berries and fruit trees in plenty encourage the children to lunch on the fruit, when ripe; no harm will result and no food so cheap and nourishing. Once planted, no crops are so easily grown as fruits. They taste so good plucked by the little hands. How they enjoy wandering over the farm and tasting of different kinds.

Of course, from all the grounds, rubbish, glass, nails, etc., which could hurt bare feet, are carefully kept. Buildings painted or covered with vines (grapes are useful here); there may be rustic seats, arbors, swings and game plats scattered about; and bird houses teach the children to love the birds. What a dull place without their sweet chatter. Life is long, childhood short. Crowd into it all the joy and freedom possible.

Inside the home let freedom rule as well. Select furniture not easily tarnished or broken—no furniture too good to be used by the children. No stuffy, mildewy parlors without sunlight, excepting for company. All day long let in the sunlight and air, the cheapest medicines, for without health we cannot be at our best. In the evening bright lights and cheer, reading or games, etc. If there are no musicians in the home, have at least a phonograph.

The happiest homes are where there are no servants. Do not make servants of the children; they may not seem to notice it, but they will never forget it. Treat them as equals and as though they had rights. All work together to preserve order and harmony. When punishment is necessary try to reason from a child's standpoint and you will often find no offence intended. This is the ideal I am striving for, and have partially attained.

Delaware.

PRIZE LETTER

Homes Worth Remembering

MRS. C. F. GRAHAM.

As a home is always remembered, whether good or bad, it is essential we should make it good. The foundation of a good home is two people of cheerful disposition and practical common sense, each broad-minded enough to think of others first. These qualities count for more than capital and physical strength in the making of a home. A woman said to me, "If I had a mahogany table and cabinet for my parlor I should be perfectly happy." God pity her, or any woman who is made happy with things. This was from a woman whose husband had a small income. She died a few months after from overwork and worry.

There is one rule which never fails in the home. It is this, make the most of what you have and take good care of your house and family. Choose the happy medium between nasty neglect and "nasty particular," as both of these ways make everyone uncomfortable, only in different ways.

I do not believe in a thrift which deprives the home of comforts and conveniences, thereby causing overwork and nerve strain. Robert Ingersoll said, "If you have only one dollar, do not spend it like a beggar; spend it like a king." Never let your children get the idea that you are poor; it belittles them if you are poor. Forget it and be happy.

New York.

PRIZE LETTER

Shrubbery and Flowers

IDA M. HANGSTORFER.

We endeavor to keep our lawn beautified by flowers and shrubbery, trying to have some blooming all summer. The driveway is around the four sides of the house, therefore we have flowers on the four sides. There is a flower bed in the front of the house against the wall, and two in the back, one being along the woodshed. These contain many kinds of flowers, as the sweet pea, cosmos, marigold, mignonette, sweet alyssum, asters, gradioli, poppies and chrysanthemums; at various places along the other sides are the hyacinth, periwinkle, three kinds of iris, wistaria, ramblers and ferns. We do not have flower beds through the center of the lawn, thus keeping this place for croquet and the lawn swing, lawn bench and hammock; but along the edge of the lawn are planted the shrubs—pæonies, golden glow, roses, lilacs and snowballs. In addition we have several flower stands on which are the potted plants, such as the lilies, several kinds of ferns and geraniums, weeping lantana, scarlet fountain plant, tuberoses and others. Someone asked, "Why don't you have your flowers in the front yard where everyone can see them?" There are several reasons. We want the back yard as well kept as the front; then, too, during the summer months the members of our household cannot spend much time on the front porch, though we can give an occasional glance to the flowers in the rear of the house.

Pennsylvania.

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Do Lightning Rods Pay?

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TOPIC NO. 1299, SEPT. 15.—Roofing for farm buildings. What kinds have you used and with what success? What is your idea as to economy in roofing? We would like to hear of your failures as well as your successes, as we stand in need of warning as well as recommendation.

TOPIC NO. 1300, OCT. 1.—Dynamite on the farm: Give us the benefit of your experience—favorable or unfavorable—in its use for blowing out stumps, blasting rock, digging holes for posts or tree planting, breaking up the subsoil, drainage, or any other task for which you have employed it. Don't let's have theory, but actual experience of self or neighbors.

C. C. C., Jr., Penn Laird, Va.—Lightning cut many pranks in this section some years ago, burning farm buildings, killing stock and even taking the lives of a few people. Finally, however, lightning rod agents saw their opportunity and flocked here, seemingly, from all quarters of the globe. Hundreds of farm buildings were rodded, our own included, though not by agents. Roughly speaking, I judge this fad of rodding buildings came about fifteen years ago. Up to the present time not a single building, to my knowledge, has been struck or in any way injured by lightning, that was rodded. Many buildings in this section have been struck by lightning, and not a few of them destroyed, since this fad came about, but in every instance they were not rodded. Beyond a question of doubt the lightning rod, properly put up, with numerous groundings deep into the earth, are a perfect protection to buildings against lightning.

While I have long been a firm believer in lightning rods, properly erected, I saw something a few years ago that would have converted me into a lightning rod enthusiast had I not already been one. Along the roadside lightning struck an enormous walnut tree in the extreme top, tearing tree to atoms, until the current reached four telephone lines passing near the trunk of the tree, when it left the tree completely and took the wires. Not a single trace of current could be found beneath the wires, nor a fragment of bark removed. These telephone wires were simply a better conductor of electricity than the tree, just as a well erected lightning rod is a better conductor of electricity than a building.

We rodded our buildings, using a No. 6 copper wire costing, at that time, 7 cents per foot. By having a long spudding iron made expressly for the business, we experienced no difficulty in making deep groundings with but little work. We took no chances on groundings, making them numerous and deep, ranging from four on small buildings, to eight on barn and hay barn, down to a depth of eight or ten feet. Moisture is the idea in grounding the lightning rod, and to have it during a dry period a good depth is very essential. Never under any consideration give a lightning rod one grounding. Edison, our great authority on electricity, says such a grounding is more dangerous than no rods at all. Again, Edison says a building improperly rodded, such as too few groundings of a shallow depth, is more dangerous than no rods at all. Our government is not rodding our costly battleships, monuments, etc., for nothing. Evidently lightning rods properly erected and given a reasonable amount of care and attention are an excellent investment on any farm building.

Mrs. W. H. H., Needmore, Pa.—From the beginning of time that great manifestation of the power of nature, lightning, has been a source of constant fear to the minds of even the most learned men, but it has become a widely known fact that buildings can be protected by the proper erection of metal conductors. The question of lightning has been given serious consideration, and we have no better proof of this than when taking out fire insurance on our buildings we find the majority of fire insurance companies have made it almost obligatory to their policy holders to protect their buildings by lightning rods.

I venture to say Pennsylvania can boast of more lightning rod protection than any other state of which I have any knowledge. Throughout this section there are very few farm buildings that are not rodded, and a few years ago they were almost unknown; but during the last five years there have been heavy losses by fire from lightning, but no building that has been rodded has yet been damaged. Last summer a neighbor's buildings (both house and barn) were struck but no damage was done, as both were rodded.

Personally, I believe the money paid for lightning rods is money well spent. We never had our buildings rodded until this spring. We had them put on the house. They are galvanized iron. The cost was 25 cents per foot. This seems rather high compared to that of five years ago, yet I would not have them taken off for twice that amount, as I have never yet known of a building that was damaged by lightning when rodded, and the feeling of safety is alone worth the price. The only mistake we made was in not having the barn rodded. But we are contemplating having this done in the near future.

J. W. R., Carbondale, W. Va.—There can be no doubt as to the value of lightning rods as a protection to farm buildings against lightning. We do not have them on our buildings, but I have noticed that where buildings are properly protected with them, there is hardly ever any casualties from lightning, while, on the other hand, where there is no protection, the casualties have been very heavy the past five years. I would be safe, I think, in making the statement that lightning rods have saved the farmers of this county thousands of dollars the past five years.

Preparing Various Exhibits for Fairs

MRS. W. C. PALMER.

The first thing is to go over the premium list, studying it carefully, and then check off everything that is to be entered. These things should then receive the very best of care and attention until placed on exhibition.

Let boys and girls do things for the fairs, along with the grown-ups. Boys often raise the best colt, or pig, or calf, or they may have the best corn or wheat field, or the best vegetables in the garden. How it will encourage them if they win a prize!

Girls can cook, sew, make butter, can fruit and vegetables, or they may have a fine flock of chickens or turkeys. Just encourage them to enter some of these things and see if it is not worth while.

Many women excel in one thing; another in raising chickens, making butter, cooking, etc. Let her enter any or all of these things. It will cost little, if anything, to make entries, and, for instance, in case a prize is won on chickens, it will do more to help sell eggs, cockerels or pullets at a better price than most anything else you could do. The same is true of butter, canned fruit, etc. Then one learns better each year how to compete, to say nothing of the encouragement it gives one.

The next important thing to do after getting interested, is to do the very best you can by taking the greatest pains with everything that is to be placed on exhibition.

Another important thing to bear in mind is that everything should be neat and clean, for often an excellent piece of work will lose a prize because it is so soiled that the work will not show up well. Canned fruits or vegetables cannot show clear and sparkling in a jar that has not been carefully washed and polished before being placed on exhibition.

In exhibiting vegetables select for quality, uniformity, type, size and color. Never choose overgrown vegetables, for they never take a prize, but select those of a medium size. Then wash until free from all dirt, for when clean they not only show off to the best advantage their good points, but they look better in the exhibit.

In entering cooking, it is a good plan to arrange baking day to fall on the day before the fair, and then, when possible, bake two or more of the same thing. In doing so one can have more to choose from, and in that way can take the best. Bread should be baked in a single oblong pan to a golden brown. The loaf must have no bulging sides and the top slightly rounding. Never rub butter or any other grease over the top of the loaf, but lay a clean cloth over it until cold.

Butter that is to be entered should be granular in texture and of a light golden color. In churning the cream it should be slightly soured. Churn till it begins to form granules as big as a kernel of wheat, then stop. Churning the butter till it is all in one lump makes it waxy and greasy. After the butter has been removed to the bowl, do not work more than necessary. Add about as much water to the butter as there was buttermilk. This may be repeated twice. Then salt. The one-pound jar is nice for the girls to enter their butter in.

In selecting glass jars to exhibit fruit or vegetables in, choose, if possible, a jar with a white glass and as free as possible from air bubbles. If the fruit or vegetables are of a green color, then the jar with a green glass is just the thing. When fruit or vegetables are cooked in the syrup or water first, and the jars filled, always strain the juice through a cloth that has been dipped in boiling water first, as it is poured in the jar. In this way there is less sediment and it helps to make the fruit show up clear.

In entering a collection of canned fruits or vegetables, try to have the jars all the same size, style and color. If the premium list calls for a certain size jar one must use that size. Otherwise the pint jar is the nicest to use.

Where fresh fruits are selected, do not gather apples or plums unless they are of the same type, size and color. Select only the perfect fruit, and never any that have any blemishes. Then polish well by rubbing with a soft cloth so as not to injure the skins.

In sewing, one should take pains and have everything neat and clean and pressed thoroughly. Even in darning an old sock or garment lay a damp cloth over the darned part and press gently with a warm iron. This will make the darning stand out clear and show up better in the exhibit. The same is true of buttonholes.

Where the boy is going to exhibit corn he should select ears for quality, type, uniformity and ripeness. The latter is very important. Each ear should be well filled at both the tip and butt, and the kernels tightly wedged. The rows or kernels in the ear should be straight, the same size, color and shape. Never take an ear that has a red kernel if the ear is supposed to be yellow. The brighter the corn is the better.

Where grains are to be exhibited, they show up to the best advantage if made into a sheaf first. This takes time and lots of pains, but one is amply repaid in the end. Select the grain of the same length and with heads of the same size. Strip off all leaves of the grain and then begin to build the sheaf by placing each head separately. Then tie just below the heads and near the ends.

In threshed grains it is best to always hand pick it after it has been graded and cleaned. In this way one can cull out the imperfect kernels.

In the case of stock it is well worth the time to wash each animal until clean, and then rub down until it shines. However, all animals should be well greased to show up well among other cattle—pig, cow, calf, no matter which it is. It always pays.

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address

WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

SEPTEMBER 15.—A correspondent suggests as a topic for discussion, "What I am doing to keep my family healthy"—and it appeals to the Editor as having great possibilities of helpfulness. Nearly all wives and mothers—and some sisters—have strong ideas on this subject. Let's have them!

OCTOBER 1.—Tell us your plans and methods and give us your recipes for packing and curing pork and beef for winter, including corning, sugar curing, sausage, head cheese, etc. Write on any or all these, as you please, but don't make your letters too long.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Saving the "Cast-offs"

Mrs. B. C., Springville, N. Y.—It is not a pleasant task to always make over and wear old clothes, but it seems quite necessary at the present time.

The boys are always wearing out the seats of their pants. When the pants begin to be thin on the seat, I take a large piece of cotton cloth as near the color of the pants as possible, and tack it smoothly on the inside of the pants. Then with thread the shade of the pants I darn back and forth on the outside. This is hardly noticeable and lengthens the life of the pants.

Some of the boys' shirts are worn at the wrist, getting thin on the shoulders and tight around the neck. I put on a white sport collar, cut the sleeves elbow length and hem them and tack an old shirt flap to the yoke and side seams on the inside of the shirt, leaving the lower end loose. This gives the shoulders longer service and, though a trifle warmer it is not in sight as a patch would be. I put new cuffs and collar on the men's shirts; they do not like sport shirts. I also strengthen the backs with shrunken cheese cloth, if I have no flaps of same material as the shirt.

From the sacks in which flour and calf meal was purchased, I made petticoats and sleeveless union suits, also sheets for the cot, by sewing four sacks together with flat seams. This makes a double sheet, which is best for cots, because it will not pull up and leave the feet bare.

Feather beds being insanitary and out of style, I put the feathers in cushions and pillows, and made the tick (a fine twilled, white one of my grandmother's day) into a couple of nightgowns.

My gingham house dresses gave out at elbows and under arms. I cut out the sleeves, making a large armhole, which I hemmed. I wear my bungalow apron over this, using the dress as a slip, thus saving my underwaists and petticoats to wear with my good house dresses. My one silk dress was beyond wearing, but by removing the sleeves, cutting the neck round and using the good parts of the sleeves for little peplums back and front, and re-hemming the skirt, I had a good jumper to wear over old waists.

An expensive all wool sweater was badly faded. It was too loose and too long to be in season, the yarn was too fine to be re-knit at home, and it could not be dyed without spoiling the white stripes on collar and cuffs. I turned the sweater inside out, re-stitched the seams in sleeves and sides, turned up the bottom until the sweater was stylish length, sewed the front up three-fourths of its length and laced it the rest of the way with a middy lace, put an elastic around the waist and covered it with a black velvet belt. The collar and cuffs were double, and reversible, so they did not need to be altered. Now I have a dandy slip-on sweater which does duty as a waist with white skirts, and also takes the place of a wrap.

Two voile dresses were subjects for the rag bag. I made a plaited skirt of alternate panels of plain and flowered voile, and a round-necked, short-sleeved waist with flowered vestee. I washed the completed garment with a preparation which is at once a soap and a dye and I had a pale green dress with flowers several shades darker. I added a black velvet belt and touched up the waist with narrow velvet. When too soiled for wear I will remove the velvet, dye the dress a new color and trim with ribbon.

Two old-fashioned serge dresses had been hanging around for a long time. One was navy, the other lighter blue. There was not enough good cloth in either for a whole dress, but by combining them a very smart effect was obtained. Of the lighter blue I made a round-necked, straight, sleeveless tunic to slip over the head. It had to be pieced several times, but the joinings were cleverly hidden by lines and scrolls of narrow black braid. There was not enough cloth for a sash, so I made a plain belt. The navy was made into a short, narrow skirt and the worn spots concealed with rows of wider braid. I removed the collar from an old georgette waist and dyed the waist to match the tunic, and wear it to furnish sleeves for the dress.

Daughter's thin dresses were all re-dyed and new belts and sashes furnished, and the necks re-collared, making an entirely new outfit.

Mrs. I. W., Campbellville, Pa.—I have found that white waists make very good corset covers. Take out the sleeves, cut as low as desired, crochet or knit some narrow lace for neck and arms. The lace can be used several times, as it is very serviceable. Light or white silk waists, with crocheted yoke, are very nice, and wear well, for best.

Gingham or percale dress skirts make good under skirts for every-day wear; or can be used to make kitchen aprons.

A cloth skirt can be easily made into a middy skirt for a young girl, and will last through several school terms.

I made an old-style flannel skirt into two girls' petticoats, using the lower part for the older girl and the upper part did nicely for the smaller girl.

You can often make skirts or dresses that are well worth while for some smaller child, out of your own children's outgrown, or the better parts of your own worn clothes, and they will be thankfully received by some mother who has several little folks and not too much time or money. Don't forget several pieces to mend with.

I made myself a heavy skirt from an old cloth coat, putting patch pockets and buttons on the front.

I made two suits for a small boy from men's old suits—one sailor suit and one Buster Brown suit.

Mrs. C. S. F., Louisville, Ky.—After they are no longer serviceable for the purpose for which they were intended, I use the best parts of my husband's worn dress shirts in making little aprons for myself. The main part of the apron is cut from the back of the shirt. Ruffles for the edges, and band and strings for the top are cut from the bottom part of the front and from the sleeves. His worn blue (he invariably wears blue) work shirts are made over into every-day dresses for my little three-year-old daughter. They are made waist and skirt style—that is, a little waist is made and a skirt sewed on, and two shirts make one dress.

I am now planning to make her a coat for every-day wear this winter from a cast-off pair of her father's pants, some parts of which are real good yet.

One clever mother that I know, last winter kept her creeping baby dressed the whole season in dresses made from his father's cast-off garments. The dresses were warm and withstood the dirt and wear that only a creeping baby can give. Men's woolen suits and shirts may be made over into pants, or even suits, for boys by a clever seamstress. Ladies' suits, skirts, cloaks or coats may be made into coats, suits or dresses for girls. A little dye, properly used, often helps wonderfully in changing and adding to the appearance of a garment either before or after it is made over. In using dyes, be sure to follow the manufacturers' directions. If you do not you are likely to spoil the goods. When clothes are so worn that they may no longer be made over into other garments, I rip or cut them apart after they have been thoroughly cleaned, and the best parts I use in making quilts. Parts that will not do for quilts I use in making crocheted rag rugs.

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FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

9714.—Ladies' waist. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. A simple embroidery motif can be used to good advantage on this model, which is made with a broad panel front.

9452.—Ladies' dress. Cut in sizes 36, 38, 40, 42 and 44 inches bust measure. A graceful linen collar borders the set-in vest. The skirt is gathered and has a pocket at each side.

9456.—Ladies' and misses' smock. Cut in sizes 16 years, 36, 40 and 44 inches bust measure. The most becoming and the easiest smock to make is this one which has the back and front in one.

9414.—Child's underwaist and drawers. Cut in sizes 2, 4, 6, 8, 10, 12 and 14 years. A very practical little undergarment is this one which has the two-in-one feature.

9324.—Boys' suit. Cut in sizes 2, 4 and 6 years. The waist of white material with a box plait at center front and straight trousers of a contrasting color, makes a dressy little suit for the small boy.

9346.—Ladies' apron. Cut in sizes 36, 40 and 44 inches bust measure. A becoming oval neckline collared in white lawn is featured in this apron which is cut in one piece and has short kimono sleeves.

9723.—Girls' dress. Cut in sizes 4, 6, 8, 10 and 12 years. Developed in gingham with chambray collar and cuffs is this frock. The gathered skirt section forms pockets in a novel way.

9718.—Two-piece skirt. Cut in sizes 26, 28, 30 and 32 inches waist measure. Plaits appear in this skirt but in quite a new way. They are inserted at each side under the pocket.

9393.—Ladies' house dress. Cut in sizes 34, 36, 38, 40, 42 and 44 inches bust measure. Surplice is the waist terminating in sash ends at the back. The sleeves may be long or short.

Our Latest Fashion Book

Owing to the number of departments in THE PRACTICAL FARMER, we are unable to illustrate as many patterns as we would like, therefore, we publish for the benefit of our readers, four times a year, a quarterly fashion magazine called—"Every Woman Her Own Dressmaker"—which illustrates hundreds of the most practical styles for ladies, misses and children, and tells how to make all kinds of garments. The regular price of this book is 10 cents a copy, but we will send it postpaid for 5 cents, or if you will order it at the same time that a pattern is ordered we will send a copy of the latest at 2 cents, postpaid. Address

FASHION DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

Rags or garments that I cannot possibly use in any other way I sell to the "rag man." Better to save a nickel or a dime that way than to burn them or let them lie around in the way.

Mrs. H. B., Hepburnville, Pa.—In these times of high prices we are all trying to make something out of nothing, and there certainly are a great many things that can be made over that would have seemed impossible before.

Many kinds of dairy feed now come in white sacks. I keep all these for making dish towels, hand towels, my own and the children's night clothes and underwear, and even made pillow cases for every-day use. One ripped open and hemmed makes just the right sized sheet for baby's crib. Of course, the letters should be washed out and this takes some rubbing, but they are of such good material that it is worth the time spent upon them. I am thinking of dyeing some and making a house dress for myself. I have made one for my little girl, of the natural color, and trimmed it with some pink material, and no one knew from what it was made. Flour sacks (cloth ones) may be bought very cheap from some bakeries and are very nice used in the same ways.

I make over almost all my own clothes that are worn, if not too badly, for my children. I have only bought goods for two or three dresses for my 18-months-old baby. The rest were all made from old waists and dresses that were not fit to wear, but were still too good to throw away. I keep all such pieces in a large box, and every winter I go through the box and pick out what I can use. I have several of my husband's old suits to make coats and trousers for my little boy of three next winter. Good parts of men's sweaters can be used in making a small one for the little folks. I never put anything in the rag bag until all buttons have been removed and the good parts cut out for patching, etc., and if there are any pieces left I cut them in strips and sew them together and have rugs made from them. So there is very little that goes to waste if one takes the time and trouble to use what we have at hand.

Miss F. R. L., Cordova, Md.—Last summer my supply of kitchen towels ran low and I began to look around for something I could use without buying, as toweling was so high. We have always used salt bags to make roller towels, but had not been able to get salt in quantities for some time, so our supply was about worn out. I had an old linen crash skirt made with a panel front and back and good wide side gores. I used it to experiment on. I ripped it up and pulled strands to straighten, getting as large pieces as possible. Then I pieced one panel and one gore together the long way, with felled seam; did the same with the other two pieces, then sewed the ends together and hemmed the sides. This made a very nice towel. I had several old white skirts that were of no use to wear, so I used them all for towels. Two were linen, made with narrow gores (about seven to the skirt). These were more tedious to make, as they required more piecing, but when done were better than I could buy. I used the wide parts of these two for one towel and later pieced the smaller pieces up for tea towels. When I had finished I had five good towels that cost only a little time and a few cents for cotton. We are still using them and only two are much worn yet.

I wore a black wool poplin skirt until it was rather soiled in the front. I had it cleaned at a cost of 75 cents. The waist was perfectly good. I cut the front from the waist, sewed the tunic and waist together, added a roll collar and revers, which extended to the bottom of the tunic. I put in a white poplin front, letting it run below the waist line, and trimmed with some small red buttons which I had used before. I put four rows of black silk braid one-half inch wide around the bottom of the tunic and on the waist above the belt, one row around the collar, belt and revers, four rows around the sleeves, and finished them with an open cuff. The revers, sleeves and belt were finished with black buttons. These and the braid I got from a mail order house at much less cost than I could buy them here. I spent four dollars on it and I could not have bought one like it for $30.

Stocking feet always wear out first, and when they are past mending we buy new feet and sew on. For every-day and winter wear they serve every purpose.

The good parts of old tablecloths are cut out and hemmed and used under the plates when the men are doing dirty work. They keep the tablecloth clean longer and protect it from wear, too.

When cretonne skirts were worn I had one and it is still bright and pretty. I am going to use it for a sofa pillow cover. Old, worn-out sheets and pillow cases, when past mending, are used for handkerchiefs in winter, and burned when used.

I am now making my commencement dress, of embroidery flouncing, into a petticoat and camisole combined. It has laid away unused for several years. I believe in making use of every available scrap of goods to save cost in these times of high prices.

Mrs. E. J. H., Tabscott, Va.—Taking the uninjured legs of discarded ladies' gum boots, cutting them open and folding them smoothly over a pair of half-worn fur-trimmed felts, soles and all, which were secured with small tacks, and stitching the heels tightly through the felts, leaving the rubber sufficiently high to turn in over the top, which, being severed as far as necessary from the vamp, only needed a few invisible stitches to make a smooth, durable finish, which afforded me the most comfortable, waterproof winter shoes I ever wore.

I carefully ripped, washed and pressed four of hubby's discarded all wool suits, two dark, two light. Cut them into squares of equal size and number, sewed them alternately together, forming two coverlets six by five feet; put the right sides together, stitched the outer edges except an aperture left for turning. Then pressed the right sides, holding the seams securely by bastings across at equal intervals, re-stitched the edges, placed it on a bed by which I sat, and taking one end upon my lap, quilted it across and lengthwise; extracted the bastings and had a beautiful block quilt equal in warmth and service to an expensive blanket.

This Recipe Cuts Out Sugar, Heat

A recipe for preparing prunes for the table without the use of any fuel to speak of, and without sugar, was presented in a late number of the Journal of Home Economics and has been tested at various agricultural colleges and pronounced good. Cover the prunes with cold water, says the recipe, drain and pour boiling water over them. Let stand three minutes, drain and barely cover with cold water. Twenty-four hours later they will be ready to serve, sweet and delicious in flavor and with rich juice.

One Ton of Hardwood Equals One Ton of Coal

Two pounds of dry wood of any non-resinous species have about as much heating value as a pound of good coal. Speaking in tons and cords, a ton of coal may be taken as the equivalent in heating value of one cord of heavy wood, one and a half cords of medium weight wood, or two cords of light weight wood, according to tests recently conducted by the Forest Products Laboratory, Madison, Wis.

One cord, or 80 cubic feet, of hickory, oak, beech, birch, hard maple, ash, elm, locust, long leaf pine, or cherry equals one ton of coal. One and one-half cords of shortleaf pine, western hemlock, red gum, Douglas fir, sycamore, or soft maple equal one ton of coal. Two cords of cedar, redwood, poplar, catalpa, cypress, basswood, spruce or white pine equal one ton of coal.

Resin gives twice as much heat as wood, weight for weight. Hence such woods as the pines and firs have more heating power per ton than non-resinous woods. The resinous woods mentioned are considered as having an average amount of resin (15 per cent.)

More Interest in Hot Lunches

Teachers and parents are commencing to realize the importance of hot school lunches, and the home-demonstration agents sent out by the United States Department of Agriculture and the state colleges are helping to establish hot lunches in communities which are awake to their value. Last year these extension workers, who are trained in home economics, helped establish hot lunches in 2,929 schools. The work will be continued this year on an even larger scale. In some counties a wall of prejudice against the innovation has to be broken down before it can be started. Where this is true, the success of the hot lunch in one school, where it has been established, is usually followed by a demand for something similar in all the adjacent schools.

Homespun Yarn

Don't throw away the tender tops from the beets. Beets greens are good.

Another reason why the pressure cooker is a money saver: By its use cheaper foods may be made appetizing.

Yes, paint does cost more than it used to. But a little will go a long way in sprucing up that dingy kitchen.

The bargain counter is a bargain counter only for those who are good judges of values; others had better beware of its enticements.

One kind of economy which is likely not to pay is using last year's jar rubbers. The cost of new ones is small, compared with the value of a few cans of spoiled fruit or vegetables.

Chocolate cake made with sour milk and soda is usually softer and darker in color than that made with sweet milk and baking powder. Cocoa should be substituted for chocolate by weight instead of by measure.

Everyone should learn to think
Of milk as food, as well as drink.

Are You *Sure?*

AFTER your jars of "preserves" and other foods are carefully put away — are you ever really *sure* how many jars will be "good" when opened?

You are not; no matter how carefully you have canned, if you put up foods the old-style way. It offers too many opportunities for spoiling.

There is only one absolutely sure way to avoid loss in food canning. That is the Thrift Way. Thrift canned foods are sealed air tight *before processing*; and never opened until ready to serve. Nothing can enter the Thrift Jar after processing. No loss can occur.

This one feature alone offsets the slight extra cost of the Thrift Way. Yet, in addition Thrift canned foods look better, taste better and sell better. And Thrift Way is much easier and quicker than other canning methods.

Ask your dealer for Thrift Jars, Caps and Sealer. If not in stock, show him this advertisement; or write us direct for free booklet,

"The Thrift Way Makes Canning Pay"

Contains prices, Canning Chart, testimonials and valuable data on canning.

Local Agents and Dealers Wanted —Liberal Terms

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FORT AVE. and LAWRENCE ST.
BALTIMORE, MARYLAND

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER II.

Mrs. Jaffrey came in late from the board meeting that afternoon with just time for a half-hour's rest before dinner. She refused to see letters on the hall table and messages on the telephone pad, and she stepped softly lest Hannah, busy in the dining room, should come between her and the delicious, vacant flatness toward which she had been straining all the way home. She reached her room in safety and her eager hands met at her throat when a sight made her start back with a moan of dismay. It was only an evening gown spread out on the bed, a pleasing gown of midnight blue and silver, but Marise stared at it as if it had been a serpent. After a shocked moment, she opened her door again and called faintly:

"*Han*-nah!"

Hannah was in the hall below and came with troubled haste, prepared to fill a hot-water bottle or telephone the doctor with quiet efficiency. For service on familiar and accepted lines, Hannah was a jewel beyond price, and it was not her fault that nature had limited her to a rabbity jaw and the smallest mouth compatible with human uses.

"Yes, m'am?" she said, poised between bathroom and telephone.

Mrs. Jaffrey pointed to the gown. "What is that for?" she demanded.

Hannah physically contracted and stiffened for protest. Evidently she had met this situation before.

"Mrs. Livingston's musicale, m'am. You have it on your calendar for nine o'clock this evening."

"Oh, thank heaven it isn't a dinner!" Mrs. Jaffrey threw off furs and cloak with a sweep of relief. "I can't go to a musicale tonight, Hannah. I'm dead, dead. Besides, some one is coming. Put that away and give me something comfortable."

Hannah went over to the bed and made a feint of gathering up the gown.

"You threw over Mrs. Livingston's reception, too," she observed.

"It doesn't matter. She won't notice whether I am there or not. I will write her an apology if you insist," Marise added with a smile, tucking herself up on a couch. "Throw something over me and let me rest, there's a good soul."

Hannah's mouth had dwindled to a mere disapproving pinch under her conservative nose.

"You are not asked as much as you used to be, Mrs. Jaffrey," she said, bringing a light rug. "There were three dinners last week that you had a good right to go to—one of twenty-four covers at the Stanley-Hopes' to meet the French ambassador and his wife. The paper had a long piece about it. Your friends will think it queer that you were not included."

Mrs. Jaffrey, relaxed, flat as she had longed to be, smiled with drowsy good humor.

"But the papers will say I was at the musicale, since I accepted," she murmured. "Won't that do?"

Hannah was picking up the discarded clothes with a professional eye for their needs.

"No, m'am, it will not," she said firmly. "You have to show yourself to keep up. Entertaining as little as you do, and never making your calls—" Then she had to stop, for Mrs. Jaffrey had fallen asleep.

Marise awoke refreshed, made new by the marvelous bodily resiliency that had kept for her, through everything, the look of a young and living woman. Girls had been shown her too often for her to feel anything momentous about the evening. She made herself look attractive from old habit, and was reading comfortably by the fire when, at the stroke of eight, the door-bell rang. In all these years, perhaps, she had never been more tranquil, more remote from her loss, than she was at the moment when Hannah passed to open the door.

Voices spoke outside, and suddenly Mrs. Jaffrey's heart began to beat, great slow beats such as dramatists sometimes use to prelude the rising of the curtain. It used to be like this before a fresh clue, but her body had been learning better since her mind had given up hope. She rose, impatient to get the agitation over with, and went a few steps to meet her guests as Hannah parted the portieres and turned on more lights. Face to face with the two girls, the agitation dropped away as suddenly as it had risen, leaving her very quiet and aloof, with an inner smile for the palpable excitement of Mrs. Healy's Mary.

There was not an instant's doubt which girl was which. They might have stood for embodiments of Success and Failure. Mary Healy was glowing, vigorous, bravely handsome; May Laguna, fragile and weakly pretty. Mary's brown hair, easily effective, waved back as simply as Mrs. Jaffrey's own, while May's metallic yellow frizzes strained piteously and wildly for effect. Mary, the much loved, looked confidently on the world as her oyster, but May knew it for the were-wolf that it was and watched in furtive silence for the ever-ready fang. She left the business of the interview wholly to Mary; and Mrs. Jaffrey, circumspectly studying her, began to suspect that the awful hair was not the open symbol that it looked, but a childish effort to propitiate a devouring fate. The gray eyes, secret, uneasy, had a vague softness, as though they had not yet wholly understood what they had witnessed.

"What if that really were my child?" The thought had come so often that it scarcely quickened Mrs. Jaffrey's pulses, but she moved to a chair beside May, and though her mind knew it for impossible, her eyes searched the downcast face and the wisp of a body for any trace of family likeness.

"You see, it's like this, Mrs. Jaffrey;" Mary Healy was keeping up the fiction that they had come to find work for May, and doing it well, in spite of burning cheeks and a volcanic consciousness of drama. She had openly waited, the first moments, for a heart-satisfying, "My child!" Then, as that was not forthcoming, she had gone stoutly to work to fill in the necessary interval while Mrs. Jaffrey made her observations. "It's like this. May can take dictation pretty fast, but she can't spell—can you, May?" The question was a tacit apology, and May's nod was unresentful. "I had high school and then business college, so of course I can spell—that's how I got into an office like Engel and Weeks's. Mr. Weeks, he tried me out himself, and he says to me, 'Good God, you're the first girl I ever saw that could spell renaissance. If you can spell facade and mezzanine, I'll start you at twelve per.'" It was a delicious memory. Success might be Mary's normal atmosphere, but evidently the breath of it never lost its tang. "Well, it would have been funny if I couldn't, with all the chances I've had," she concluded. "But May hasn't had half a show."

"No," said Mrs. Jaffrey. The descending note of sympathy produced an odd little physical flutter in the girl, as though she stirred breast feathers against a warm nest. For the first time her eyes sought Mrs. Jaffrey's.

"I'm too far behind," she said. "I can't never catch up." The voice had an ineffectual drag, and Mary was kindly anxious to make excuse for that, too.

"May isn't real strong," she urged. "She didn't get a fair start when she was little." That was coming breathlessly close to the real meaning of her visit. Mary would not have even hinted a question—she was a very nice girl; but Mrs. Jaffrey, restless under a sense that drama was expected, met the alert eyes with a grave negative. There was no sign of her child in this bit of human driftwood, her headshake said, and Mary visibly collapsed, hope escaping in a long sigh.

"What should you like to do?" Mrs. Jaffrey went on.

The direct question frightened May back into hiding, and Mary had to come to her aid.

"The trouble with May is that she wants to be a lady," she explained reasonably. "Mama gets hopping when I say things like that—she says any girl can be a lady; but she means well behaved and all that. Now here's the way I dope it out;" she bent forward, eager to be understood, and perhaps a little to instruct, for Mary Healy was used to seeing things more clearly than her associates. "There's more to being a lady than nice manners and high school, or than putting on a wrapper when you go home, and having your hair curled at a shop, and perfume, and restaurants, like May sees it. It's something you can't buy—you've got to grow it. Do you get me?"

Mrs. Jaffrey gravely assented. The simple candid equality of this glowing girl was putting her democracy of spirit to a test seldom encountered, and she had to remember forcibly that she liked it.

"Well, then," Mary concluded, "I'd rather be a top-notch working girl, a real swell of a working girl"—her laugh bubbled up, a good, warm little gurgle—"than a poor imitation of a lady. Am I right?" The question was rhetorical, for she knew gloriously well how right she was. She settled back in her chair, triumphant, and her shining face betrayed that there was no fun on earth to beat the fun of being Mary Healy. She took any possible color out of May Laguna as the sun puts out a candle flame, and Mrs. Jaffrey felt a perverse desire to draw shades and give the little candle a chance.

"I wonder how you would like sewing?" she suggested.

"No. m'am." The answer was limp rather than firm, yet final.

"You tell Mrs. Jaffrey about when you were little," Mary put in excusedly.

May told her tale baldly, without im-

(Continued on page 252)

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Placing girder in hull of American merchantman in an Eastern shipyard

Heifers Less Than Two Years in Milk

B. B. RUSHING.

The growing sentiment favorable to the early maturity in dairy cattle has, without doubt, aided materially in raising our standard of dairy production. In the upbuilding of our high-producing dairy herds, intelligent development has played a part no less important than that played by the wonderful power of heredity. And in this process of intelligent development, the proper age at which a heifer should begin the work of production is a consideration of more than passing importance.

But, in this laudable attempt to weed out of our herds the profit-destroying dairy cow (of which there are many in every community), let us beware that we do not too closely scan the dairy milk sheet, nor too zealously read the Babcock test, lest in our eagerness to reach the pinnacle of milk and butter-fat production, we ignore the foundation from which, and upon which, that pinnacle must be reared—physical capacity, constitutional vigor and ability of the vital organs to withstand the strain that is brought upon them. In the bringing out of the inherited dairy tendencies, experience has taught that early maturity is a decidedly important factor. But, unless by proper feeding, ventilation, sanitation and management, we secure the greatest possible vital endurance, inevitable failure must be our final reward.

The general facts are of sufficient importance to warrant specific application. The professional man, sparing neither cash, time nor labor, may, by systematic management, secure that degree of maturity which will warrant having a heifer freshen and take upon herself the duties of early motherhood at less than two years of age.

But here is Mr. Average Farmer: What if he should catch the idea? Right here lies the danger of overdoing a good thing. As we travel through the country from farm to farm, where dairy cows are kept for milk, in any of our good agricultural communities, we find heifers growing up that have never known anything better than a scant grain ration. They have never been forced to an early maturity, but they will make good-sized cows if given time to grow. Ordinarily, about all the heifers we see in a day's travel answer fairly well to this description. They are to be the cows of the immediate future, strong constitutioned, thrifty and vigorous, if given a chance to be so, but stunted, weak constitutioned, ready victims to the diseases and ailments of cow-kind, if forced to begin the work of production and reproduction before the body organs have been well developed to the point at which they can stand the extra strain without too great physical weakening.

Meanwhile, let us be cautious in the means we employ to enforce upon the farming world the conviction that early maturity is an essential to high dairy production without, at the same time, emphasizing the need of maintaining a perfect balance between production and constitutional development.

I have seen a number of little, undersized Jersey heifers freshen at one and one-half years old, and watching the future development of these same heifers, they seldom ever come to a full and profitable development as does their sister, who does not freshen until she has made better development and is at least two years old; not much past that, but up to that.

And this matter is not so hard to keep well in hand, if we only have the male under the right control. I never consider it good business to allow the male to run with the cows and heifers. When he does run with them, you never know for sure when the cows are to freshen; some will be dropped at the back of the field, when you are least expecting it, and others will be dropped when they may be herding at the gateway to the barn, and be trodden down. By keeping him separate this can all be avoided, and you will know, by keeping date of service, just when to expect each cow and heifer to freshen, and the heifers need not be bred until they have reached that stage of development where they are in shape to enter into the duties of motherhood, and thus the whole herd will be much more profitable. Everything we can provide for the growth and development of the young heifers without forcing them to a limit beyond their ability to stand should be provided, as there never was a time when the products of the dairy cow were more needed than at the present, both at home to help feed the farm family, and in the city to help feed the laborer in the factory and mine, and to develop healthy children in surroundings that don't always foster such development. *Illinois.*

Look Out for This Parasite

One of the greatest parasites of sheep is the stomach worm, prevalent at this time of year. They are about three-quarters of an inch in length, red and white intertwined, and become attached to the stomach where they live on the blood of the animal. The general health of the flock can be better maintained by preventing or curing invasion. The Pennsylvania State College department of animal husbandry offers the following methods of preventing infection:

In the culling of the flock, remove all unthrifty ewes, as they are the animals most likely to be infected.

Keep the ewes in a thrifty condition by liberal feeding, which helps resist the worm.

A frequent change of pasture prevents infection, as the egg is laid and hatched externally, and if a host animal is not present the young larvæ die.

Breed for earlier lambs, as the young lambs then become large enough to resist the infection, being in a thrifty condition when warm weather comes.

Drenching will aid in both preventing and removing the worms. This is done usually by using two methods of treatment, gasoline or copper sulphate solution. The college will give information on how to administer these treatments.

If sheep have ticks, dip them; you can't afford to feed ticks, summer or winter.

STANDING AGAINST THE STORM

EDGAR L. VINCENT.

A STORM swept over the country last night. It carried down some of our choicest trees. We always dread to see these friends of the leaf and unfolding fruit fall before the blast; it takes so long to grow them! Some of the trees that stretched their length along the earth were in the orchard, some were shade trees; but I think the one we mourned the most was the old elm that stands in the meadow. From one side of this beautiful tree one of the largest branches was torn. It still lies where it fell.

One thing we could not but notice in connection with these slain and mutilated trees. Practically every one of them had been weakened by some foe. We could trace the work of the enemy in the softened wood just where the branch had been broken off, or in the rotten roots turned up by the tree trunk when it went down. Of all the trees on the farm, those withstood the tempest best which had not suffered from the encroachment of bug or worm or other pest.

Standing against the storm!

Standing here and looking out over the farm this morning, nothing impresses us more surely than that life depends upon freedom from hidden foes. Have you not seen it in those you know? Aye, is it not far too often borne in upon you that every defeat we suffer, every loss we sustain in our heart-life may be traced directly to some enemy of the soul that has been slowly eating its way toward the very holy of holies of our nature? And oh! the cost of such a struggle! Cost of disappointment, cost of hopes not realized, cost of everything we hold dear! Tears, heartaches, failure mark the ravages of sin in the soul.

But think of the joy of the storms we have weathered! What a pleasure to turn away from the bruised and broken trees of orchard, wood and meadow to the straight, beautiful trees which have not been scathed by wind or lightning blast! Their green foliage looks doubly fair this morning. The birds sing from their tops joyously. Breezes soft and balmy play with their branches, for all is well with them today.

How like this is to the man who has met the worst life has of evil and come off conqueror! A tower of strength in the midst of storm-swept and defeated comrades! Rocks in the desert, never yet riven by thunderbolt or honeycombed by frost! Strong, true, worthy to be trusted! And why?

Because they have trusted in God and He has kept them from going down in the face of secret foe or open enemy. Not in their own strength have they been able to do this. Had they so trusted, they would have been like the rest, down on their faces in the dust. But now they are conquerors and "more than conquerors through Him who has loved us."

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Struven's Fish Meal contains 55% to 60% digestible protein. No other feed on the market can equal this amount of digestible protein—and that's what you pay your money for for ought to when you buy a protein feed to balance your corn or barley.

Then too, the hogs like Struven's Fish Meal. Practical feeding tests have shown that hogs eat feeds with fish meal in them better than when any other protein concentrate is used.

If your dealer does not carry Struven's Fish Meal, send us his name and we will supply you either through him or direct.

We shall be glad to tell you a lot of interesting things about fish meal that you perhaps do not now know. Write us.

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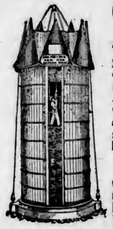

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SELECTED REGISTERED BERKSHIRE PIGS
3 months old, both sexes
W. F. McSPARRAN, Furnice, Pa.

A Girl Named Mary

(Continued from page 250)

agination or grace, leaving blanks that only her downcast eyes commented on—making nothing of it all, and coming out as empty as she had gone in; and Mrs. Jaffrey, testing herself, cried in her sorrowing heart:

"Yes, yes! If this were my child, I could take her in, love her, teach her, bring her as far as I could and never wince for her failings—I could accept it and be glad if I had found my child!" The assurance exalted her, filling her with the joy of her strength. She longed to run with it to Hugh, who doubted. This had been her life lesson, and it was not ill learned, since she could have taken May Laguna to her heart. When they rose to go, she folded May's hand between both hers.

"I will see what I can do," she promised. "Come back tomorrow at eleven. And thank you," she added with meaning to Mary Healy.

Mary's quick smile had a wistful curl at the corner. "I wish—I wish it could have been," she ventured.

"Come and see me again, Mary;" Mrs. Jaffrey was kindly, but perfunctory. Only young women who needed her help could rouse her poignant interest, and palpably no one needed help less than Mrs. Healy's Mary.

She shut the door on them and turned back, hesitating between the fire and bed as she put out unnecessary lights, her thoughts entirely on the present, her heart, for once, idly content. She was asking nothing, and yet it was in that moment that the longing of years was granted. Against the sudden dimness she saw once more the face of her baby. It leaped into life full before her as she had not seen it for years, the dear, blooming, earnest little face, tipped up to her in beaming love. "Mardie!"—the beloved old name with its rising crow sounded in her ears. For a living instant the child was there, restored to her, not a line forgotten, and then, though she had not moved or breathed, it was gone. She strained sight and senses, she fixed passionately on every remembered detail, but she could not call back the vision. Instead, she could see only the face of Mary Healy. She thrust it aside, but it came back again and again, and once more her heart began to thud out some code message. Quiet and book were impossible. She called up Hugh, but he was out. Then, finding the blue and silver gown still spread on her bed, she summoned Hannah.

"Help me dress and call a taxi," she commanded. "I am going, after all."

Hannah's Victorian spirit rejoiced, but cautiously. Mrs. Jaffrey was perfectly capable of changing her mind again.

"You see, ma'm, you, being what you are, can live on the West Side, as some could not," she explained over the hooks. "; it isn't just the same as if you ha East Side address. You do have eep up a bit more."

"'Kee ?'" Marise murmured, absent ey ring at the lady who stared back at from the mirror. She was not see what the world saw—that her blu s were sharply fringed with black, t er pale face had distinction and her body grace; she was seeing the lon uggle. How she had "kept up!" N Hannah's way, but because a galla irit had come down to her from h irbears, and she had never questio its commands. Perhaps if one could learn to give up, let go, look the tattered thing that one was—

"The taxi, m'am," said Hannah obligingly. You could never be sure of Mrs. Jaffrey till you had her safely stated; and even then she had been known to come back.

(To be continued)

A forest crop calls for less actual outlay of cash in proportion to the final income than any other form of enterprise. An investment of $10 to $15 an acre, with a small annual carrying charge, in 40 to 50 years will produce a return equivalent to from four to six per cent. compound interest for the period involved.

In 1919, Pennsylvania ranked first in the production of buckwheat, fifth in potatoes, sixth in hay, eighth in tobacco, ninth in rye, thirteenth in wheat, fourteenth in corn and fifteenth in oats.

CREATING NEW MARKETS

The Dairyman's Problem

THE successful business takes advantage of every market presented for its products. Utilizing the formerly wasted by-products of manufacturing processes has invariably benefited both the producer and the consumer.

Three fundamental principles of business practice which have stood the test of long experience are—

Eliminate waste by utilizing the entire product.

Always seek new outlets for the product.

Create for every by-product a legitimate market.

Now how can these business principles be applied to dairying?

Government reports show that about 41 per cent. of the total production of milk in this country—or about thirty-four and one-half billion pounds—is devoted to butter-making. Of this amount only about four per cent., or three and one-third billion pounds, actually becomes butter. The balance—about thirty-one and one-third billion pounds—goes back to the dairyman as skimmed milk for which some other use must be found. There are no statistics to indicate what becomes of all the skimmed milk, but government figures show that only about two per cent. of this valuable food finds its way into the human dietary.

The Dairy Division of the Department of Agriculture, in a recent bulletin, says about skimmed milk:

"In the past, much skimmed milk has been wasted, both by throwing it away and by feeding it to live-stock, when it could have been used to better advantage as human food. This does not mean that no skimmed milk should be fed to calves, hogs and chickens. Such a conclusion would be ridiculous, because our markets are not ready to absorb all of the skimmed milk produced, but human needs should be cared for first, and only the surplus skimmed milk should be fed to live-stock. Such a procedure is logical and is based upon economic grounds."

It is apparent that the dairyman is not putting all of his product to its most profitable use.

And this is due largely to the fact that because lacking a fat content skimmed milk does not appeal to the taste.

It is necessary, therefore, to find for skimmed milk a human use, and so improve the product that it will be best suited for that use.

By the addition of a fat, wholesome and nutritious, skimmed milk can be made very desirable for use in cooking and baking.

This fact is what first suggested HEBE, a product consisting of pure skimmed milk enriched with cocoanut fat. HEBE is the first real effort to develop a broad commercial outlet for skimmed milk as human food. It sells to a multitude of housewives who would not otherwise use milk for cooking at all, and thus it increases the general consumption of dairy products.

HEBE BENEFITS ENTIRE DAIRY INDUSTRY

Then the question arises—How will HEBE benefit the dairyman who is not near enough to a HEBE condensery to send his milk there? The answer is that while the HEBE industry is young and HEBE plants few in number, yet every can of HEBE sold is helping to develop this new market, and every bit of advertising put out by The Hebe Company is helping to educate the public to a greater use of dairy products. The ice-cream industry is a parallel case. Although many dairymen are not within shipping distance of an ice-cream factory, yet every milk producer is benefited by the increased demand caused by the use of nearly four billion pounds of milk yearly by the ice-cream manufacturers.

HEBE is not intended to replace milk for direct feeding purposes. It is offered as an auxiliary to the family milk supply, *for use in cooking and baking.* It is honestly labeled as to contents and uses, and is advertised extensively.

Thus HEBE becomes an important factor in the solution of the dairyman's problem—"creating new markets." As an ally to the dairying industry it seeks to make for itself a new market, without interfering with other established markets, and in doing so it increases the general use of dairy products to the profit of the entire dairying industry.

You will be interested in reading our booklet, "The Missing Third." Ask us to send you a copy. There is no charge for this. Address 2859 Consumers Bldg., Chicago.

THE HEBE COMPANY

CHICAGO SEATTLE

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The Practical Farmer

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JOE BERRY—SOIL WIZARD

By WESLEY RAY

THIS isn't the story of how an alchemist discovered a process whereby he turned baser metals into gold. The twentieth century version is, rather, how to make something out of nothing, and the world today is full of people looking for this secret. We have no patience with this class, but we do like to tell people of someone who has succeeded in wresting success from apparent failure.

J. M. Berry—"Farmer Joe" his neighbors call him—has, in his farming career, accomplished results little short of the miraculous. Sixteen years ago he purchased a worn-out farm in the flat woods country of eastern Kentucky, consisting of 190 acres. The price he paid was $2,000. At this time Joe's worldly possessions consisted of a "plug" team of horses and a young wife. He borrowed the money from his father-in-law to pay for his farm. "I didn't even have a houn' dog to begin with," he said in his jovial way, when we began to question him about his farming business.

"Well," he said, as we urged him to give us a brief sketch of his successful farm experience, "I attribute the most of my modest success to a good wife. She has furnished the brains and pep, and I've furnished the sweat and credit, for the most part. I was born of poor parents and I am glad of it, for I think that about the saddest thing that can befall a man in this life is to be born with a silver spoon in his mouth. Such a person misses that keen zest which comes to the red blood who has a fight in prospect worthy the battle. I have always been a great admirer of farm papers. Father used to scold me soundly for frittering my time away with those 'worthless papers.' But I kept right on devouring everything agricultural, for I had made up my mind to be a farmer, and therefore my own boss. My idea when I bought this farm was to grow poor-land crops at first, such as cowpeas, velvet beans and soy beans, clovers—red, crimson and, later, sweet clover—and alfalfa, and market these at home by keeping cattle and hogs. The bottom land was little better than swamps. I began by tiling ten acres the first year and cultivating in corn, and I surprised my neighbors by raising a bumper crop—46 bushels per acre, where it had only yielded 15 to 20 bushels before. Every day I had to spare I was cutting brush in the old fallow fields, and piling it in the ditches, which literally honey-combed the hill fields. I worked, worked, worked, and my wife was as busy as me. Within four years I had 60 acres of bottom tiled, which was producing 40 to 50 bushels of corn, and from 18 to 20 bushels of wheat to the acre. I had 20 acres of permanent pasture grass on the hill and 25 acres in clover, and it was clover and cowpeas, velvet and soy beans. And I had a new barn 40x80 feet, a span of good horses in place of the plugs I started in with, 3 fine young cows, 28 yearling heifers, 40 spring calves and a nice herd of Duroc swine; and wife had the finest flock of R. I. Red chickens and Pekin ducks in the county. And I want to add that those chickens and ducks were a gold mine.

Typical scene right now in a Jersey Peach orchard

"We took a careful inventory in starting the fifth year, and found that we had gained in the four years, counting our stock, barn and improvement in the land, grain and hay, just $4,600. I did not mention a young orchard of 5 acres I had put out, which is long since bearing, and has netted us more than we paid for the entire farm. But I bought those trees on five years' time, paying 6 per cent. interest. This debt, together with the debt of the farm and accumulated interest, was $2,363.

"It may seem strange that we had not paid the farm debt off in four years,

Threshing oats on a Wisconsin farm. The threshers are busy men these days in all parts of the land

but right here is where the average farm buyer makes a mistake, in taking the earnings of the farm and paying on debts, when they should continue to pay 6 per cent. interest and invest the money they make on the farm for improved stock and good farm machinery. I owed for my farm eight years, and I am quite sure that the $2,000 that I paid interest on netted us $10,000 in this time. Anyhow, it gave us a chance to accomplish what we have. The neighbors thought at the time that I had paid far too much for this old fallow farm. In fact, some of them freely predicted that we would starve off of it in three years. But today I would not consider $20,000 a tempting offer. Indeed, I would not sell at any price, for with land advancing as it is today, and with my system of improvement, it will be worth $30,000 in another ten years. I have all my bottom land well tiled now and my crops are mostly wheat, clover, cowpeas, beans and rye; I raise a little corn to finish off my hogs, but corn doesn't pay as well as other crops. We strive to keep the very best type of live stock."

And then Mr. Berry took me on a tour of inspection, and what I saw was equal to a short course in agriculture. We visited the barns first, and here everything was as neat as a pin; new paint, modern equipment, 6 fine registered Holstein cows, a fine bunch of yearling heifers and about 80 calves, 4 very fine brood mares of the Percheron type. But his swine interested me most; fifty odd brood sows and 6 fine boars, which had cost him quite a sum of money, and more than 300 pigs and shoats, all of the big type Duroc. It was a fair day in February and those hogs were feeding in a rye field. They certainly made a picture not soon to be forgotten. We went on to the orchard and here I learned some new things about the care of an orchard. The trees were pruned and headed low, and the orchard was sowed to rye, upon which Mrs. Berry's fine flock of chickens was feeding, and I can say that here was a sight to gladden the heart of any real poultryman. Nearly 250 fine young hens with markings so nearly alike it would be impossible for a visitor to distinguish one from another!

From the orchard we went to the hill fields. I was much interested in a fine field of alfalfa, which he said took him five years to get started. Mr. Berry banks upon alfalfa and sweet clover, and he has about 30 acres of the latter growing now upon his farm, which, he says, is great for his bees. Mr. Berry is not interested in truck growing except to the extent of supplying the table with fresh vegetables.

"Yes indeed, I have made mistakes," he declared, "and lots of them. However, I made no mistake in doing two things in my young manhood. They were marrying the right kind of girl and reading farm papers." And anyone who has met Mrs. Berry and has seen the results obtained will no doubt agree with him. *West Virginia.*

Money Making on the Side

C. A. UMOSELLE.

UNLESS a farmer has much feeding to occupy his time in winter, or is engaged in improving his buildings and farm during his idle moments, he begins to dream of making money on the side. Farming is all very well, but he wants to earn extra money. This is a laudable ambition, provided his ideas do not run away with his common sense, for money making on the side is the rock upon which many a vessel has been wrecked.

There are countless small or large enterprises in which a farmer may engage safely and make a fair profit from them, all legitimate and fairly easy, but they must fit in with the season and with the help he is able to muster. But, on the other hand, there are many money making enterprises that can only be carried on on the farm, and yet are not for the average farmer. It all depends on the circumstances, and a plan that may fit in well on the farm adjoining might be financial suicide.

Once upon a time there was a man who was most successful in the bee business, and every year he made a great deal of money out of both honey and bees. That is, he said he was successful, and he had the money to show for it; but his wife was really the person who attended to the bees. She loved the work, and, having competent help in the house, she devoted a great deal of her time to the enterprise; in fact, she took entire charge of the apiary. It did not worry her that her husband took the credit, and most people believed that he did the work. She enjoyed it, and had plenty of money to spend, so she did not care. But the neighbors became intoxicated with the idea of keeping bees; more time, money and energy were expended for some years on bees than on crops, and the people suffered great loss. The men would hang around waiting for the bees to swarm, when they should have been out haying, and the very little profit on the bees was swallowed up many times by the very large loss on the hay and corn.

A prosperous farmer saw his prosperous neighbor quietly collecting live stock year by year and having annual sales at a good profit, and he thought this was a good way to make money on the side. He did not go into the matter deeply enough to know that the man who had the annual sales had a father who loved to tinker about the place, getting the animals fed up, watching the hired men while his son was absent, and in every way looking after things when the owner was gone; but he soon found that the profits on stock could not overbalance the loss on crops. Nor would hired men take the interest necessary in building up run-down stock in order to make a profit on it. If he had been able to attend to his crops in summer and buy his cattle in winter, he would have done well; but he never stopped to consider this fact.

A "homey" farm home of the kind our women have been telling us about

But other men have made money on the side in such a wise manner that their plans will bear repeating. One man gave his sons some pure-bred collie dogs and encouraged them to raise fine animals for sale. A certain amount of money they were pledged to spend for their clothes and their books and pleasures, while the rest was theirs to keep or to invest in other things. In this way the boys became self-supporting and were willing and anxious to help with the farm work, because of the chance to make money, while the neighbors were worrying about their boys running off to town. The farmer also saved the amount the books and clothing would cost him. Another occupied his winter and fall when work was slack, in feeding cattle on shares for a neighbor farmer, getting the highest prices for his crops by the transaction, and a good salary for his time. In spring the stock was gone and he was ready to attend to his own work with highly fertilized fields and a fair amount of money to show for his usual leisure season.

Another man occupied his leisure in winter taking prospective farm buyers about the country for a real estate man, and thereby was able to pick up several bargains for himself in the way of cheap live stock, as well as to make his idle horse earn a nice sum of money. In summer he would be too busy to think of such a thing, but in summer people were not buying farms; so the two worked together nicely. Another man with a mechanical turn fitted up a little "shop" and repaired implements, sharpened saws and did innumerable small chores for the people around, earning a good salary from fall to spring.

A certain wise farmer took orders for a leading nursery, earning a salary for three months and getting his trees all delivered before spring work came on, while still another made and sold incubators in winter. Still another farmer took orders in the fall for spring fertilizers, and always got his almost for nothing. Whenever he would meet a farmer friend he would ask if he had already placed his fertilizer order for spring, and after two seasons the farmers go to see him about their orders.

Such occupations as require attention in the busy season must be passed up by the successful farmer. Perhaps the children of the family can look after the raising of pets and the selling of small fruits, but the man with a large corn crop on his hands can undertake no such enterprise. Any scheme that will interfere with the ordinary farm work is sure to be deceptive, and if persisted in will surely bring disaster. If it will work in nicely in the winter it may prove all right, but beware of the side issue that demands attention in hot weather.

Too many men have put their irons in many fires only to see them all burn. Farming as a business demands all the time, thought and energy that the ordinary farmer can give it from spring to late fall. *New Jersey.*

Wheat and Red Clover

HERBERT A. SHEARER.

"WE have learned that we can keep our soil in good heart by seeding red clover with every wheat crop. Wheat and clover are both handled by machinery from start to finish. This fact makes it possible for us to farm 360 acres of land and to feed from 100 to 200 hogs and from 50 to 100 head of cattle with the help of one man the year around, and a couple of school boys in summer."

This statement was made to me by a farmer in Southern Indiana. It has been customary to grow wheat and red clover together on the same land since farming in the United States was new. But the steady practice of adding clover to wheat at every planting has been discontinued in many sections to the great detriment of the land.

Both wheat and clover are money crops when grown together, and they occupy the same seedbed without interfering one with the other. Wheat is shallow rooted in comparison with red clover, therefore the root growth of wheat is made in much less time. At wheat harvest time clover roots have penetrated deep enough to supply plant food to push the clover stems upward. If the moisture is available clover soon hides the wheat stubble and a new crop is well under way without the expense of preparing the ground.

The wheat makes more bushels because of the clover. The clover swamps out volunteer wheat and prevents the second brood of Hessian fly. Without volunteer wheat but few flies would hatch out to lay their eggs on the new wheat that is seeded in the fall. Clover grows rapidly after the wheat is harvested and it often makes a good deal of fall pasture. Pasturing kills many destructive insects that otherwise would make trouble next year. The following year the clover makes pasture in the spring. It pays to pasture clover early in the season, because animals eat the stems and leaves where the eggs of insects were hatching. This is one reason why the clover seed crop is more than likely to be

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SEPTEMBER 1, 1920

IT is remarkable how big things finally come about, isn't it? Thinking back I can remember how—when I was a boy and when John P. St. John and Belva Lockwood were, respectively, the Prohibition and Women's Suffrage candidates for the Presidency—we used to incredulously laugh at the fond dreams of a few individuals that the liquor traffic would eventually be under Federal ban or that women would be given the ballot throughout the land. Certainly I didn't think, in those boyhood days, that I would live to see the consummation of both those "dreams." And yet—behold the eighteenth and nineteenth amendments to the constitution of the United States!

Neither national prohibition nor "votes for women" has come to us just as those "cranks" of our boyhood days thought it would—through the building up of an independent party with a one-idea platform—but they both *came*, and we have to "hand it" to those same "cranks" for their persistence in keeping their "dreams" everlastingly before us until an awakened sense of right and justice moved a great people to action in both cases.

It proves two things: First, that if it's right it's worth sticking to—always—in spite of defeats and disappointments—and jeers. And second, that "It pays to advertise." And the two things are pretty closely related, aren't they?

* * * * * * * *

And now about this nineteenth amendment—this "votes for women" matter—we certainly do congratulate our "women folks"—yes, and our "men folks," too—that justice has finally been done and that the mothers and daughters and sisters and wives of the United States of America are to have a direct hand in its government; that hereafter not alone through the indirect medium of "mere man" will "the hand that rocks the cradle rule the world." Yes, we've been a suffragist for some few years and we certainly are rejoicing in victory!

But now that the battle is over and the smoke is rolling away, we've got to face the facts as they are revealed to us in the light of a new day. Millions of newly enfranchised citizens, and no one can estimate with any degree of surety how they will vote in the approaching presidential election—or how many of them will vote at all! Why, it may change the whole face of the political status of our country—or it may not. Surely a great responsibility rests upon our women, some of whom have achieved it and others have had it thrust upon them—but an equal responsibility in either case. And to the farm woman who reads this I want to offer a couple of suggestions regarding the meeting of this responsibility.

The "antis" in the long battle preceding the adoption and ratification of this nineteenth amendment have advanced the argument that while the "radicals" among women and the lower element of the sex in our cities would accept the franchise eagerly, the more refined—the "better" element—in cities and towns and the women on the farms would decline or neglect to cast their ballots and that accordingly American politics would be lowered instead of lifted by giving the ballot to women. This *may* be so, but it *needn't* be. If it is I, and, I think, the majority of men, will be disappointed and disillusioned, for in our experience we've found that womanhood generally meets its responsibilities squarely and bravely. And we say to you farm women "*vote*—at any expense of time and energy accept your citizenship and *vote;* study civil government, political science, and the issues before us as a nation today as you have opportunity, but whether you have much or little opportunity for this study form your own opinion to the best of your ability and express it in your ballot. Show us what you can do to uplift politics now that you have the chance."

And remember that, in every election, issues (principles) are paramount. Men are so often prone to consider candidates before they examine the principles they represent—the platforms on which they stand—and it seems as if women might be as likely to be swayed by personalities. And that is "putting the cart before the horse." The right order is this: First: "What platform do I approve?" Second: "Does the candidate standing for election on that platform fairly represent it; has he the capability to perform and the honesty to be trusted?" Much nonsense will be addressed to you in this, and all campaigns—many appeals will be made to your sentiment—to capture your vote. Don't be too easily moved; think things over and try to see below the surface. Get down to facts when catch words and rhetoric are thrown at you. But we don't need to worry about this; women as a class are, we believe, less "gullible" than men—also regarded as a class.

Well, God bless you women as you take over the ballot—which you've earned. May you do great things with it for our dear country.

EDWARD T. WALKER.

The Silo to the Front

A GOOD many farmers will find themselves short of corn to fill the silo this coming fall. In some instances this is due to lack of help at planting time. They were not able to get in the usual acreage of corn, and the result will show at harvest time. Again, some farmers have not gotten as good a stand of corn as usual. The seed used was poor, so that the crop looks spotted. Still again, what corn did come in some cases has not come on as well as it might. Altogether, the corn needed for the silo seems to be lacking in a good many sections of the country.

This throws an added burden upon us to look out for other forms of green stuff that can be cut into ensilage. A day or two ago on a visit to a farm where there are a large number of cows, it was noted that the corn crop was practically missing. There were two big silos, but where was the corn to come from to fill them? Inquiry showed that the owner of the farm was planning to fill these silos with oats and peas, cut as we usually cut corn. There is a wisdom about this which commends itself to us all. But are there always oats and peas for this purpose? It surely is too late to sow now.

But wherever there are any of the grain sorghums, Egyptian corn, kaffir, feterita and so on, they make a good substitute for corn ensilage. In many respects kaffir silage is the best of all these. Again, alfalfa usually grows rank enough for several cuttings a year. Some of this may be turned into ensilage this fall.

Many meadows make a heavy aftermath after haying. This is often permitted to fall back on the ground and stay till it rots. By cutting this and putting it up for silage, we may save it all and help the stock through to another spring. Clover is especially fine when cut into the silo this way. Everything possible ought to be saved this year, for it certainly is with many a time of crisis.

Back to the Warren Formula

IT is a cause for rejoicing among dairy farmers everywhere that the Warren formula should come to the front again as a basis for fixing the price for milk. For some time prior to this last spring, the Dairymen's League had been using as a basis the current price for butter, cheese and some other concurrent figures. These prices, however, were too fluctuating to work out satisfactorily; so now the League is returning to the Warren formula as the best and most sensible method of arriving at the price of milk.

From the very start this resulted favorably to the dairymen of the League. Now they had something definite and tangible to work on. They could go to the dealers and say: "Now we know what our milk is costing us and we are determined that we must have that and a fair living percentage of profit over and above actual cost price." There could be no reasonable reply to argument like that, and the dealers, after standing out for some time through policy, presumably, accepted the terms proposed by the farmers.

These are the figures as determined by the Warren formula for the four months beginning June 1st: June, $2.83 per hundred for 3 per cent. milk; July, $2.95; August, $3.35; September, $3.65. It is a great relief to be delivered from the fear of a contest every month; and then, too, it does not seem likely that there will be as much difficulty in determining the price hereafter as there has been under previous methods.

There is, and there can be, no more sensible way of fixing the price of butter, milk, or any farm product, for that matter, than that of the cost of production. That stands first in every calculation of a business nature. What does my product cost? Knowing that, the next step is to add a fair, just and reasonable sum for living profit. We believe the farmers will hold to this in the matter of milk production in the future and that this will work out well.

Bulletin Helps for Farmers

A revised edition of Farmers' Bulletin No. 1064, "Production of Late, or Main Crop, Potatoes," has recently been issued and should certainly be added to the agricultural library of every farmer at all interested in potato growing. This bulletin was primarily prepared for the northeastern section of the country and it is therefore particularly valuable to the majority of our readers.

With the growth of the "pure-bred sire" movement farmers in many communities are buying and maintaining pure-bred bulls co-operatively. Those interested in forming associations for this purpose should get a copy of Farmers' Bulletin No. 998, "Co-operative Bull Associations"—recently issued in revised form. Included in this bulletin is a model constitution and set of by-laws for such an organization.

A revision of the well-known treatise on "Farm Bookkeeping," put out originally some eight years ago by the Department of Agriculture, has just been issued. It is complete and up-to-date and its careful study would bring about a revolution on many farms that would prove profitable to their owners, who today are guessing at costs of production and profits and wondering frequently why they are not prosperous. Farmers' Bulletin No. 511.

Any of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

The Fall Garden

W. F. MASSEY

September closes the seed planting season of the year. The seeds sown this month are mainly for crops to mature next season, with the exception that some early turnips of the Milan varieties can still be sown for fall use. One of the leading garden crops is spinach. Of this we can sow early in September the smooth seeded Norfolk Savoy variety to cut in late fall, and sowing more the middle of the month we can winter it over for spring cutting. Some gardeners sow spinach seed in the spring, and I have done so when the fall-sown crop was destroyed by an unusually cold winter like that of 1917-18. But I find that the fall-sown gives earlier cutting and lasts just as long as the spring-sown. Therefore I sow all in the fall and take the risk of the winter. Only once has it been killed entirely.

The Early Milan turnips will grow almost as quickly as a radish, and last about as long, for they soon get pithy. Possibly with a late season the Purple Top Globe turnip may make fair sized roots sown the first of the month.

By the middle of the month plant sets of the Yellow Potato onion in heavily fertilized rows 15 inches apart. I open furrows with the garden hand plow and in this put the fertilizer. Then throw a furrow from each side, making a ridge, flatten the ridge half way and set the sets on it shallowly.

Further south snap bush beans may be planted and make pods before frost. In fact, they could have been here a year ago, for we had no frost last fall until November.

About the middle of the month sow seed of the Early Jersey Wakefield cabbages. I prefer to sow thinly broadcast on a fertile bed and rake the seed in, as I get better plants than in crowded rows. From Baltimore south we can set these plants later in open furrows and they will winter all right and make the earliest cabbages in the spring. In colder climates the plants had better be transplanted in frames 2x2 inches apart and set deep enough to protect the stems, and through the winter protected with cloth or sashes and given plenty of air to keep them dormant.

In the flower garden plant sweet peas in a deep trench the latter part of the month. They will usually winter well from Philadelphia southward. Here I sow in late September or in January and find little difference in the earliness. The varieties grown for greenhouse forcing are good for southern planting, as they bloom earlier, and it is essential here and southward to get the bloom early or we do not get it at all.

Lettuce seed of the Big Boston variety should be sown early in the month for setting in cold frames for heading at Christmas and New Year. Where the double glazed sashes are used and the frame is well banked on the outside no mats will be needed. Hittinger's Belmont lettuce is a closer heading variety and can be set in the frames 6x6 inches, while the Big Boston needs 8x10 inches. The Big Boston is generally used by the market growers, while the greenhouse forcers north use the Belmont or the Tennis Ball. For family use I prefer the Belmont.

By the last of the month the celery planted in the Baltimore bed method can have some earth added and packed closely to the plants, always carrying the earth up six inches outside the bed. Where it is grown in single rows the earthing should proceed rapidly and will finally be finished in the storage trenches, while in the Baltimore beds it remains until used. I once asked the late Peter Henderson why they did not try the bed method in the Jersey City gardens. He replied that he wished they could, but he feared the climate would be found too severe and that the freezing would penetrate the beds. It seems to me that the heavy covering of straw packed down with some earth to prevent its blowing off, would protect so hardy a plant even that far north.

Where celery is grown in single rows on a large scale, special tools are used to hill the earth to the rows and partly blanch it. In the North where the earlier crop of celery is grown, they blanch it for the September market by setting boards on each side of the rows, or wrapping heavy paper around the plants, held by rubber snappers. I have seen fine celery grown in this way at Cleveland, Ohio. The rows were but 16 inches apart and heavily mulched with manure, and never cultivated after transplanting from the seedbed. Our summer is too hot down here to attempt this early crop.

Parsnips and salsify should be kept cultivated clean. With the cooler nights these plants will make their best growth. In fact, here they usually grow until Christmas and are left standing where grown, all winter. We take them up for use when the soil is soft.

The turnips sown in August will need to be thinned to stand 4 inches apart. Having been unable to get stable manure for my garden, I tried, this season, the dried sheep manure from the Chicago stockyards. It gave very poor results except in the introduction of foreign weeds. I shall depend on the street sweepings and rotted garden refuse for humus and will use the high grade commercial fertilizers. I also used a fertilizer called Phospho Germ. It is offered as a "vitalizer," and they claim it is inoculated with all the bacteria that live on various legume plants and also the aztobacker or soil-nitrifying bacteria. It was said to be especially effective in preventing the blights that affect tomato plants. I put it an inch thick around part of the early tomatoes and I saw no results, for there was as much leaf blight there as where none was used. It did neither harm nor good, and as much black sand would have been just as effective. I tried an article called Melrose that was claimed to be sure death to rose bugs. I used it on my grapes and the bugs fattened on it and ate every blossom and I have no grapes. On reporting the result to the manufacturer he said that they had not recommended it to kill rose bugs on grape vines, but on rose bushes. Anyone who is simple enough may accept that sort of an excuse. I try some things in my garden every year, and sometimes get a good thing and sometimes a poor one, and I do not hesitate to tell the truth about them. If you have rose bugs next season, mix one part calcium arsenate in two parts of air slaked lime and use it with a dust gun and you will find it effective either on grape vines or roses.

Cider Making Rulings

Section 29 of Title II of the National Prohibition Act provides that the penalties imposed in the act against the manufacture of liquor without a permit shall not apply to a person for manufacturing non-intoxicating cider and fruit juices exclusively for use in his home, but such cider and fruit juices shall not be sold or delivered except to persons having permits to manufacture vinegar.

The Bureau's interpretation of the foregoing provision is as follows: Any person may, without permit, and without giving bond, manufacture non-intoxicating cider and fruit juices, and in so doing he may take his apples or fruits to a custom mill and have them made into cider and fruit juices. After such non-intoxicating cider and fruit juices are made, they must be used exclusively in the home, and when so used, the phrase "non-intoxicating" means non-intoxicating in fact, and not necessarily less than one-half of one per cent. of alcohol, as provided in Section 1, of Title II, of the said Act.

Or if the person making such cider and fruit juices desires to do so, he may (1) sell such cider and fruit juices at any time to persons having permits to make vinegar; this he may do under the provisions of said Section 29. (2) If he preserves such cider and fruit juices at the time they are made, he may sell same to the public in general; this he may do under the provisions of Section 4, of Title II, of said Act. (3) Or he may sell said cider and other fruit juices so long as they contain less than one-half of one per cent. of alcohol, but the purchasers thereof cannot use or possess the same after they contain more than one-half of one per cent. of alcohol; this he may do under the provisions of Sections 1 and 3, of Title II, of said Act.

The cider in the home may be allowed to turn to vinegar if the owner desires, provided he adds no sugar or other fermentable substance to the cider or fruit juices to increase the alcoholic content thereof, inasmuch as such practice is held to constitute a mash fit for distillation within the provisions of Section 3282 Revised Statutes; he may sell said vinegar to any one who may desire to purchase it; this he may do under the provisions of Section 4, of Title II, of said Act.

This regulation is not intended to cover the commercial use of cider and fruit juices, but merely the use of the same as applied to the home and as provision is made in Section 29 of Title II, of said Act.

Economy does not necessarily mean spending a small amount, but in getting the largest return for the money expended.

"No," said a shrewd farmer, "I don't know as noise or talking at milking time reduces the flow of milk—but it may make the job last longer."

Don't Freeze Next Winter

You must burn coal or wood. Coal is scarce and high priced. Wood is plentiful and cheap. Get a WITTE Drag Saw. Cut your wood for almost nothing. You can get delivery if you buy now. Big demand later. Write for **Special Prices for Summer Delivery**

The WITTE Arm Swing Saw is Lever Controlled. You Push to Start—Pull to stop. Any speed you want in starting or stopping. A fast cutting outfit with high power 4-cycle engine. Cash or Easy Payments. Big circular and price list Free.

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25 Cords a Day

Easily Sawed By One Man. Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

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Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price. Cash or Easy Payments.

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CORN HARVESTER One man, one horse, one row. Self Gathering. Equal to a Corn Binder. Sold direct to Farmers for 22 yrs. Only $28 with fodder binder. Free Catalog showing pictures of Harvester. PROCESS CORN HARVESTER CO., Salina, Kans.

For prompt attention tell our advertisers you "saw it in THE PRACTICAL FARMER."

Fair, Free or Equal, Let's Think it Over

A SOIL TILLER.

On sees so much, and hears so much more about farm help drifting cityward that I feel like stating a few well-known facts. For twenty years I have been carefully observing the actions of two farmer landlords, one living on either side of me about three-quarters of a mile distant. The one is growing wealthy, raspy and mean, despised by everybody, while the other is prosperous, happy and helpful to everyone, especially his helpers, and admired by all. Some contrast, is it not?

Now for the difference. The one (whose life I consider a blessing) hires a family to live in a well-kept tenant house, given a grand garden and truck patch, feed for all the chickens they care to raise for half, dry feed for a cow, and all the choice fruit they can consume, besides lots of smaller bargains, worth while but too numerous to mention; always quitting in good time at the end of the day, given a day off occasionally and a fine team to take the family for an outing occasionally. The landlord usually takes his own and this family to church in his automobile. Besides this family hired by the year, he hires three day laborers, paying them a living wage and treating them fine in various ways, thus letting them know and feel that every effort they put forth is highly appreciated. I have never known this man to be short of help; he has the same laborers year after year. The only time a change is made is when one is financially able to go for himself; then the boss gives him a lift financially, some good advice and bids him Godspeed.

The "rasper" sends out a glowing ad. of his wonderful bargain, and the pity of it all is, some poor, unsuspecting soul swallows the bait before investigating, to feel sorry for a whole year. The house and barn are in a dilapidated condition; in fact, an eyesore to all passersby. The garden and truck patch, which were to be so extensive, are without fences, open to dogs, rabbits, and smothered with weeds, for the poor man works from daylight till dark, eating supper, even in summertime, by lamplight. And the poor wife, slaving with the inconveniences the place affords, and caring for her six small children, hasn't any time for gardening. Besides, supper being so late, the wife and babies (otherwise good-humored) are peevish and indignant at the long-drawn-out end of an otherwise "perfect day." There are no out-buildings whatever; chickens roost on the fence, and hogs alongside. The cow which was to be furnished dry feed, gets it in the shape of broom splints, as the hay for this particular cow never gets made till it can be mowed and put right into the barn. The trash which has accumulated for twenty years, and ordered not to be molested, is an excellent rat and weasel harbor, which eat and destroy the peeps as fast as the poor woman has them hatched. The fruit which they were to have in abundance is nothing but unmarketable and unsalable culls. In striking contrast is the landlord's home, a mansion, with every convenience that money can buy, even to the finest auto in the county. Besides his tenant this landlord hires boys, rather than men, giving as his reason that if he keeps them "scared up" he can get as much work done as by men, and only pays boys' wages. Some business to this, but little principle.

Is it any wonder the help is drifting from the farm? Landlord reader, if you are in this cursed class, crawl over the fence and change your manner of dealing with man, for humanity's sake, for as sure as snakes you'll get yours in the great hereafter.

Cover Cropping Saves Money for Farmers

That cover cropping is gaining favor in Ohio is pointed out by recent publications issued by Ohio soil specialists.

Cover cropping consists in sowing the corn ground after the last cultivation, or even after harvesting, to rye and vetch, these growing crops keeping the soil from washing during the winter and also preventing valuable plant food from being leached away.

A good combination for cover crop seeding is a mixture of rye and vetch, from 4 to 6 pecks of rye and 1 to 1½ pecks of vetch per acre. The vetch seed usually requires inoculating.

These crops are then turned under in the spring. In this manner the organic content of the soil is also increased.

Don't Get Gassed in the Silo

Farmers are again warned by agricultural specialists of the danger of becoming gassed during the filling of silos. Large amounts of carbon dioxide are produced in the silo from the green crop and may collect in dangerous quantities if conditions become favorable. To avoid such an accumulation of the gas, the doors should be left open as long as possible. Men should not stay in the silo when the blower is not running, and especially they should not sit or lie upon the fresh silage. If work has been interrupted for any length of time, workers should not again enter the silo until the blower has been running for a few minutes. This removes the dangerous gases.

Onion Care

Do not let your onions go to seed. Cut off the flowers as near the top as possible, so that no rain can get down through the hollow stem to the onion and cause it to rot. Remember, too, in storing this crop, even in a small quantity and for a short time, that the onions must be thoroughly dried and cured. This can perhaps best be accomplished by leaving them in the sun and wind for several days, covering them at night.

National Grange Meeting

Mechanics' Hall and Faneuil Hall, Boston, Nov. 10-19, are the place and date of the 54th annual session of the National Grange. Reduced rates on all railroads are anticipated. New England plans to break all records for a Seventh Degree class. Sessions the first week will be in Mechanics' Hall, which will accommodate six thousand people, and two degree classes will be given the degree work here. Sessions the second week will be in the "Cradle of Liberty."

When cities are boasting of their increasing population, they want to remember that much of the increase comes from the farms; and that farm folks who are in the cities are not producing food for city folks to eat.

If this generation doesn't provide timber for the coming generations, or if lumber gets so expensive that our grandchildren can't afford to use it, whose fault will it be?

Burlap sacks represent real money these days. Those with small holes or rips are well worth mending.

No city in the nation is removed from starvation more than two weeks. —Asbury F. Lever.

This Heat Beats Winter and Cuts Expense

Simple way of heating a 6-room cellarless cottage by IDEAL-Arcola Radiator-Boiler and 4 AMERICAN Radiators. Ask for catalog (free) showing open views of heating layouts of 4-, 5-, 6- and 7-rooms.

Modernize the old home and enjoy life in comfort. This small house heating outfit is built on the same principle as the big plants for residences. The IDEAL-Arcola is inexpensive, safe, easy to run, clean, economical with fuel and will last and heat your home for generations. It will heat all rooms evenly no matter how hard the blizzard blows—never wears out or needs repairs.

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Any dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B Size IDEAL-Arcola with	100 sq. ft. of Radiation	$142
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For Hard Coal	No. 1-A Size IDEAL-Arcola with	135 sq. ft. of Radiation	$163
	" 2-A " " " "	200 " "	206
	" 3-A " " " "	265 " "	251
	" 4-A " " " "	330 " "	299
	" 5-A " " " "	400 " "	349

Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete f. o. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks into the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.

The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5, or 6 AMERICAN Raditors and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See prices below for various sizes of outfits.

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents. AMERICAN RADIATOR COMPANY Write to Department F-45 Chicago

50 Eggs a Day

"More Eggs' Tonic is a Godsend," writes Mrs. Myrtle Ice, of Boston, Ky. She adds, "I was only getting 12 eggs a day and now I get 50." Give *your* hens a few cents' worth of "More Eggs," the wonderful egg producer, and you will be amazed and delighted with results.

Hens Lay While Moulting

During moulting your hens will need "More Eggs" to get them over the moult **quickly and easily**, to revitalize their organs and put them in fine laying condition. Just read the letters below telling how users actually **got eggs during Moulting!** You, too, can make your hens moult fast, get eggs sooner and more eggs all fall and winter. This scientific tonic has been tried, tested and proven by over 400,000 chicken raisers. Try Reefer's "More Eggs" on my iron clad **money-back guarantee of** satisfaction.

$1.00 Package FREE

If you wish to try this great profit maker, simply write a post-card or letter to E. J. Reefer, the poultry expert, 5336, Reefer Bldg., Kansas City, Mo., and ask for his special free package $2.00 offer. Don't send any money. Mr. Reefer will send you three $1.00 packages of "More Eggs". You pay the postman upon delivery only $2.00, the price of just two packages, the extra package being free. The Million Dollar Merchants Bank of Kansas City, Mo., guarantees if you are not absolutely satisfied, your two dollars will be returned **at any time**, within 30 days—on request. No risk to you. Write today for this special free offer.

Read These Letters Showing Wonderful Results of "More Eggs"

First Time Hens Laid During Moult

I have used your "More Eggs" Tonic since last fall and can surely say it has amply paid me. I have had chickens for 7 years and this is the **first time they have ever laid through their moulting season.**
MRS. C. LUGINBUHL, Norwood, Ohio.

Loafers Before, Layers Now

My hens have **laid through moulting this year.** It is the first since I had chickens. They have always been loafers until I used "More Eggs", now they are good layers.
MRS. H. J. SCHULZE, Pittsburgh, Kans.

Gets Eggs All Year

Have several friends that wish to use your "More Eggs" Tonic after seeing that I have been so successful in **getting eggs all through the year and moulting season.**
MRS. J. MEDARIS, Dale, Texas.

Send No Money!

Don't send any money; just fill in and mail coupon. You will be sent, at once, three $1.00 packages of "MORE EGGS." Pay the postman upon delivery only $2.00, the extra package being **FREE**. Don't wait—take advantage of this free offer TODAY! Reap the **BIG** profits "MORE EGGS" will make for you. Have plenty of eggs to sell when the price is highest. Send TODAY—NOW!

$1 Package FREE

E. J. Reefer, Poultry Expert, 5336, Reefer Bldg., Kansas City, Mo.
Dear Mr. Reefer:—I accept your offer. Send me the three $1.00 packages of Reefer's "More Eggs" for which I agree to pay the postman $2.00 when he brings me the three packages, the extra package being **free**. You agree to refund me $2.00 *at any time* within 30 days, if *all three* of these packages do not prove satisfactory in every way.

Name ....

Address ....

....

To Get Big Husky Pullets

ADDIE GRAVES.

The most important thing about raising fine, large pullets is to avoid crowding. Of course, they are supposed to be kept clean, their coops free from mites and cleaned every day of droppings. I used to like to see chickens taught to go on roosts at night as soon as possible, but after repeatedly finding nearly all the cockerels with badly crooked breastbones we have discontinued using roosts until the chickens are weighing at least three pounds. It is better to clean the coops every day than to find a lot of prize cockerels with an inverted breast. If the chickens are hatched very early in the season, and are with hens, they may be left with the hens until they have their first feathers and weigh about a pound. Later in the season, when the nights are warm, the hens must be taken from small coops after four weeks. If each hen has only a dozen chicks, two broods may be doubled up for a while. We always put two coops side by side so as to do this, taking one away at the time of weaning. As soon as the chickens are big enough to be too warm again, we put a bigger coop in the place of the small one. Having just the right temperature nights is a necessary factor in having the right sort of stock. When the chickens outgrow the second coop, we take out all broiler cockerels and put them in an empty hen pen with a small outdoor yard where they are fed their green stuff, which is clover and grass, which is mown often enough to keep it short and tender. This grows where we have had small chicken runs that have been moved every day. The land is so rich that the grass grows very rapidly, allowing of cutting almost every week. When the pullets weigh about three pounds they are put into hen-sized pens with large runs, large enough to have clean grass till late fall. Four yards are used in raising the chicks with hens, besides the cockerel yards—one cockerel yard for those to be killed and one for those to be saved for selected breeders. The hens and chickens are given individual yards until the chicks are at least a week old and strong enough to stand a little crowding when put into the big yard. No hens and chickens should stay in the first big yard after the chicks are eight weeks old, if there are over two hundred in the yard. Even if the yard contains an acre of ground, the larger chickens will crowd the smaller and weaker, getting the best of the feed, and possibly injuring them.

I am presuming that they are fed damp mashes and scratch grain at each meal time. Even if fed in hoppers, entirely of dry grain, there would be crowding and fighting. So it is best to move the larger chickens to yard number three, making room for more small ones. A brook runs through the first two large yards, where they get cool, fresh water all the time, and two sides are shaded. The first large yard is thickly strung with twine running from the side posts to posts in the middle, to keep out pigeon hawks. It is impossible to let the chickens have open range, on account of foxes, even if our garden and lawn could exist with them about. We find that the small chickens do very much better when allowed the large yard than when confined in small runs. They never stop growing, at any stage, and the cockerels weigh three pounds at twelve weeks of age.

We have all S. C. R. I. R. at present. After the pullets are separated and are in yard number four, we boil whole wheat and set it out in the yards in the pails it is cooked in. We salt the water we boil it in, as we would if we were to eat it ourselves. When barley is much cheaper than wheat, we boil that sometimes, but we do not care much for boiled oats, although we sometimes add a few. Since grain has been so high, we always feed all mashes just damp, because no grain is wasted. It saves time and strength to feed dry mash in hoppers, but the chickens grow much faster with the damp mash and it does not pay to have them discard any part of it at the present prices. Also, the strongest ones do not get first choice. We use a commercial mash that has no alfalfa in it, because we always have trouble with any beef scrap that we buy, but never have lost any chickens with the commercial mash. The hard grains we buy separate. We give the pullets either two damp mashes, or one mash and one feed of boiled grain, each day—morning and mid-afternoon, giving hard grain at eleven and evening. With this bill of fare the pullets weigh five pounds or more and begin laying good sized eggs when they are six months old. This last year we did not have one sick chicken. One got trampled, one got a broken leg by being caught in the wire, and one had a twisted neck. We have never had a case of roup or even a cold, in six years.

The coops are tight, with wire fronts. In cool weather we face the coops to the south; in hot weather to the west, from where the wind usually blows here. We have not had a body louse on the place during the six years we have been here. We started with incubator chickens, never buying or borrowing fowls. *New Hampshire.*

Wheat and Red Clover

(Concluded from page 254)

profitable when the first growth is pastured instead of cutting it for hay.

After the clover seed is cut and harvested by machinery the land is in good condition to plow by machinery, so that real hard labor has been cut out of the wheat-clover crop from preparing the ground for wheat all through the various manipulations of both crops until the clover seed is ready to market. The great cost of hand labor has become so serious that we must either grow machine-made crops or let the land lie idle. Some machine-made crops are hard on the land, but clover is a benefit. The clover-wheat combination, properly handled, improves the soil.

Clover will not succeed well unless the ground contains plenty of lime near the surface where the roots of young clover can reach it. Nearly all of our most valuable farm crops are benefited, either directly or indirectly, by lime. But lime alone cannot benefit the land. We must have humus in the ground before we can have soil. Humus is the organic component of soil. The best humus is made from different parts of the clover plant. Clover humus is rich in nitrogen, the most expensive of all fertilizers.

Farm Advertising Pays

Advertising is becoming an important phase in the marketing of farm products, and is something that all farmers who want to succeed should become interested in.

Through some form of advertising you can let the public know that your produce is a good bit above the average, and that it will benefit to pay you just a little more and get the best. Advertising is now regarded as essential in placing any commodity on the market, and the up-to-date farmer will take the best advantage of it.—Dean R. L. Watts, Penn. State College.

Most hens will lay if they are allowed to; many successes with chickens are made in spite of the owner rather than on account of him.

"Let the hair go with the hide"

Specialists in tanning Horse, Cow, Calf or any kind of hide with hair or fur on it. We make robes, coats, caps, gloves, muffs, rugs, etc., to your order. *You save money* and we save your furs. *Free* catalog of stylish fur garments. *Free* instructions for handling furs. Fur garments and goods of all kinds repaired and *made like new.*
We mount large and small game, birds and fish. Write today.

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EVERGREENS For Fall Planting

September is the ideal time for planting Evergreens. We have tens of thousands of thrifty specimens ready for immediate shipment. We ball and burlap them *without any extra charge.*
Write today for catalog describing Evergreens for lawns, hedges and windbreaks, also complete line of fruit trees and small fruits.
Harrisons' Nurseries
Box 34 Berlin, Maryland

Newly Invented SAW RIG

LOW INTRODUCTORY OFFER

COSTS so little no one with wood to cut can afford to be without it. Will saw your winter's wood in a few hours. Does all practical work any other saw rig can and makes unnecessary the expensive, cumbersome rigs used in the past. For a small part of their cost you can now own the

OTTAWA SAW RIG

Powerful 4-cycle motor. Suitable for driving belt driven machinery. Easy to operate, light to move, simple to handle. Users say they make $11.00 per day cutting wood for the neighbors. 30 Days' Trial; 10-Year Guarantee. Let the Ottawa do your sawing 30 days to prove our claims. Free Book.
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273 Main Street, OTTAWA, KANSAS.
Ottawa Ships 'em Quick.

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Hay and all farm products wanted. Daily demand at good prices. GIBBS & BRO., 323 N. Front Street, Philadelphia. Est. 1844

FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Anconas, Orpingtons, Langshans, Brahmas, Leghorns, Andalusians, turkeys, ducks, geese, guineas. Prices low. Ralph H. Raby, Loudonville, O.

90 BREEDS Poultry, eggs, baby chicks, pigeons, dogs, parrots, ferrets, Belgian Hares, bargain list free; 60-page book 20 cents. Bergey's Poultry Farm, Telford, Pa.

Doing Away With the Leaky Barnyard

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

Topic No. 1300, Oct. 1.—Dynamite on the farm: Give us the benefit of your experience—favorable or unfavorable—in its use for blowing out stumps, blasting rock, digging holes for posts or tree planting, breaking up the subsoil, drainage, or any other task for which you have employed it. Don't let's have theory, but actual experience of self or neighbors.

Topic No. 1301, Oct. 15.—What is your favorite breed of swine and why? Do you prefer pure-breds or grades? Why? Please remember that this is an *experience* pool—not an examination in theoretical animal husbandry—and limit yourself to a statement of your own experience or that which has come under your personal observation.

C. C. C., Jr., Penn Laird, Va.—Hauling in high-priced fertility in the form of fertilizer and carelessly permitting identically the same thing, only much better, to leach away during every rainstorm, in the form of manure, the very essence at that, sounds like a joke, yet the number of farmers who tolerate this costly joke is surprisingly large. We once stood for this costly joke ourselves, until we became ashamed of ourselves and set about to end it, which we accomplished with more ease than we anticipated.

There is absolutely no occasion for what might be truly termed a "leaky barnyard." Our leak, like most others, came from faulty outside drainage. With the exception of one corner of the barnyard we merely had to divert outside drainage by making a few ditches at a trifling cost in labor, to permanently check this shameful waste. One corner of the barnyard presented a different problem. It was lower than surrounding grounds, making outside drainage out of the question. Finally, however, we hit upon the idea of a concrete wall for this corner, erected it at small cost and this ended our barnyard leak. Later we built a new barn, keeping our old barnyard leak well in mind when selecting a suitable location. By selecting a location perfectly drained from all sides, our new barnyard is leak-proof. Since repairing a leaky barnyard and making a new one leak-proof, I carefully observe all barnyards throughout the community, finding but few absolutely leak-proof, and many presenting a shameful waste by leaching, that could be easily and cheaply remedied. If every farmer could see the true value, in printed analyses, of this valuable black liquid flowing from barnyards during a rainstorm, he would work day and night to check it. It must be remembered that the visible part of manure is merely a carrier for the better fertilizing elements, all of which are invisible. Preventing the visible portion of manure from washing away, yet permitting it to leach away by bad drainage, is merely saving the inferior part, which only adds humus to our soil, and losing practically all the rest.

J. N. G., Vicksburg, Pa.—The soil of our barnyard is heavy clay, which holds water a long time. But it used to be sloped so that surplus water would run into the lane or on to the public road in case of heavy rains.

To stop this waste we plowed up and graded the yard so that it sloped in such a direction as to carry this surplus water to a drain which we put under the lane to the pasture meadow, where it spreads around and there is no loss of this valuable liquid. The effect of this liquid manure is very evident in the extra growth of grass and continued good pasture on the parts of the meadow which are reached. By means of furrows we change the course of this water so as to help as much surface as possible.

F. G. D., Richmond, Va.—Disregard of the manure supply is a weakness that is prevalent among too many farmers, as a drive along the average country road will readily prove, and it is something we should all seek to eradicate. If each farmer made the most of the manure production on his farm, not only would his own soil improvement expenses be reduced, but it would also tend to lessen the demand for commercial fertilizers, which, in turn, would result in an easing up of prices on that commodity.

No farmer, rich or poor, can afford to pile manure outside the stable and await a convenient time to distribute it, because it deteriorates very rapidly. Good stable manure contains not only the fertilizing elements that plant life craves, but it also improves the soil by increasing the amount of humus and adding to the water absorbing and water holding power of the land.

Of course, the best plan to follow is to haul it to the fields as soon as it is produced, but, unfortunately, that cannot always be done, hence some kind of protection against sun and rain must be provided. In my experience, I have never known of anything better than a covered concrete pit, every opening of which is securely screened against flies. It is a well-known fact that manure is the best breeding place for flies, hence if the manure supply is screened, flies won't be so numerous. Therefore, besides the insurance against loss in the value of the manure which the covered pit affords, a most efficient blow is also struck at a very annoying pest.

C. A. U., Hammonton, N. J.—Needing a manure ditch last winter, I tried the plan that I am going to give to the readers of The Practical Farmer. I have a ground floor in my cow stable. I made a water-tight trough 10 inches deep; then I dug a trench 4 feet 6 inches back from the manger, and deep enough so the trough would go 2 inches below the surface. I graded a space 16 inches wide even with the top of the trough, and I then placed in a 16-inch plank, spiking it to the edge of the trough, for cows' hind feet, and now I have a ditch to save the manure, and a floor that cows will not slip on. If you have graded cows I would make the ditch diagonal in the stable, having the floor 5 feet wide at one end and 4 feet at the other. Of course, the ditch is much better if made out of concrete, and I shall make one much larger this fall at my other barn. After the ditch is full it is taken out on the land where most needed.

Tomatoes Easiest Food to Can

American housewives may well take a lesson from their foreign born neighbors in the use they make of the tomato, says the school of home economics at Cornell University. This so-called vegetable, which is really a fruit, is said to be one of the most valuable additions to the diet, and since its own acid aids in its preservation it is easily canned for winter use. Tomatoes may be preserved as simple canned tomatoes or as a puree, or even dried as a paste, which may be used later in the making of soups and sauces. Following is an explanation of the two methods of canning:

Select tomatoes that are ripe, but not over-ripe, and free from blemishes. Scald them for from one-half to two minutes, dip them into cold water, and remove them quickly. Remove the stem, core and skin.

Open Kettle Method.—Place the tomatoes in an enameled kettle, and for every quart add 1 teaspoonful of salt and from 1 to 3 teaspoonfuls of sugar. Add no water. Bring the mass to the boiling point and boil for from 6 to 10 minutes. Large tomatoes should be turned during cooking. With a sterilized spoon ladle them into jars that have been sterilized by being boiled for 20 minutes, filling the jars to overflowing. Adjust the rubbers that have been placed in boiling water for 5 minutes, and the covers that have been sterilized with the jars. Seal the jars and invert them to cool.

Cold-Pack Method.—Pack the prepared tomatoes into the jars, pressing them down firmly with a wooden spoon. Fill the jars with boiling tomato juice to within a quarter inch of the top. To each quart add 1 teaspoonful of salt and from 1 to 3 teaspoonfuls of sugar. Sterilize the jars in a hot-water bath for 25 minutes.

The secretary of the Mercer Fair has asked us to tell our readers that the Fair will be held at Mercer, Pa., Sept. 14, 15 and 16. There has been some misunderstanding about the dates this year, but these are correct.

The boy or girl who is not a member of a junior project club is likely to be lonesome. Are your boys and girls missing out on fun and instruction to which they are entitled?

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

OCTOBER 1.—Tell us your plans and methods and give us your recipes for packing and curing pork and beef for winter, including corning, sugar curing, sausage, head cheese, etc. Write on any or all these, as you please, but don't make your letters too long.

OCTOBER 15.—Rugs and carpets. Give us the benefit of your experience in making and buying floor coverings; also practical suggestions for saving them in service and repairing them. Rugs and carpets are very expensive these days, so let's make this a really helpful exchange in economical hints.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Doing up Peaches and Cucumber Pickles

J. M. G., Buchanan, Va. — Sister's cucumber pickles are so good they are in demand at Red Cross and other public dinners, as well as at home. After gathering the cucumbers she thoroughly cleans them, rubbing off the spines and scraping out any crevices, cuts a thin slice from each end and soaks them over night (or it may be longer if desired) in weak brine, then drains and lets them come to a boil in vinegar enough to cover them. Drain out of this (throw away the vinegar), place in jars and cover with boiling vinegar to which has been added sugar and spices to taste, and seal. She varies these according to fancy, but says a tiny pod of red pepper is a pleasing addition. When desired for immediate use she cuts each cucumber into quarters, after washing as above, boils them a short time in weak brine and covers with sweetened and spiced vinegar. They may be used next day. Of course, for those who like very sour pickles the sugar may be omitted, but sister makes her's pretty sweet.

I will send my neighbor's recipe for her delicious sauce peaches: Take one peck of whole peaches, 3 pounds sugar, ½ cupful of vinegar. If peaches are very sour add ½ lb. more sugar. Make a syrup of the sugar, vinegar and half gallon of water. Boil peaches (one layer at a time) in syrup until tender. When all are cooked, fill jars with syrup and seal. Boil down syrup before filling jars. Bruised or over-ripe peaches, which do not keep well canned, make good marmalade if an equal quantity of cooked apples are added. Cook until thick, add ¾ lb. of heated sugar to each pound of fruit, cook fifteen minutes, put in sterilized jars and seal.

V. H., Duffy, W. Va.—Peaches for preserving must be ripe, but not soft. I cut them in halves, first paring them neatly. Take as many pounds of white sugar as of peaches; to each pound of sugar use a cup of water; stir until dissolved. Set over a moderate fire and when it is boiling hot put in the peaches. Do not hurry them, as there is danger of burning them.

To pickle yellow peaches, pare and quarter them and use one cup of vinegar and one-half cup of sugar to each pound of fruit; add cinnamon and cloves to suit taste. Boil until soft, and keep in a cool cellar.

CUCUMBER PICKLES.—Take small cucumbers and wash; put in kettle, add vinegar to cover and use one cup of sugar to one gallon of pickles; put in spice to suit taste, boil a few minutes and can in glass jars. They are fine.

I often put cucumbers down in 10 or 12-gallon crocks, using a little water, and enough salt to make a strong brine and weight down with a stone or bricks and when wanted soak in several waters and pickle.

I. M., Centre Square, Pa. — For sweet pickles, wash the small cucumbers, cover with boiling water and let stand in this for 24 hours, then drain, wipe them dry and put into cold vinegar, prepared as follows: To 1 gallon of strong cider vinegar I add ¾ cup of salt, 1 cup of ground mustard and 2 cups of white sugar. They may be packed in jars or crocks, then covered with clean grape leaves. They should be kept under the liquid by means of a weight. They will keep even if unsealed, as the vinegar acts as a preservative.

From the large cucumbers we make the salted cucumbers. Into a large crock we place a layer of the cucumbers over which are scattered a few grape or horse-radish leaves, then completely cover with salt. Continue this process until a sufficient amount is prepared. Keep the cucumbers down with a heavy weight. May be used in several weeks. Place the required number of salted cucumbers in a crock, cover with cold water, place on the back of the stove over night. Pour off the water and cover with vinegar.

To can peaches, make a syrup of 1 quart of sugar and 3 quarts of water. Put a layer of prepared fruit into this hot syrup; boil gently for 10 minutes. They should be so tender as to be easily pierced with a silver fork. Place in sterilized jars and seal. This is sufficient syrup for 8 quarts of fruit, for, after one layer of fruit is removed, another is added to the same syrup.

Mrs. M. H., Mayville, N. Y.—With my small late or frost peaches I make pickles. Eight pounds of peaches, 4 pounds of sugar (maple sugar is good), 1 pint of vinegar. Stick two or three cloves in each peach. Do not pare. Add a few sticks of cinnamon bark. Cook until tender. Take from syrup and cool. When cold put in jars. Pour cold syrup over. Let stand 24 hours then seal up.

For cucumber pickles, select small ones, three or four inches long. Put in strong brine over night; in the morning put in clear water about three hours. Cover with syrup made with vinegar and sugar, a few whole cloves and pieces of stick cinnamon; add sugar according to whether you care for sweet or sour pickles. Let the pickles scald, not boil, in the syrup, then pack them into cans and pour boiling syrup over and seal while hot. These will keep hard and good for several years.

Mrs. O. J., Rio, La.—To peel peaches I immerse them in boiling water to which a teaspoonful of soda for each gallon has been added, until the skins begin to crack; plunge into cold water and they may be skinned with the fingers as easily as tomatoes.

Select large, firm peaches, peel, cut in halves, pack in jars as close as possible without mashing; cover with a syrup made by boiling one pint of sugar in four pints of water and let cool. Place jars on rack or a folded cloth in the wash boiler, pour in sufficient water to half cover jars, put on lid and let boil ten or twelve minutes, according to ripeness of fruit. Remove from water, tighten lids and keep in a cool, dark place.

WHOLE STEAMED PEACHES. — Select uniform specimens, pare and steam in covered steamer until fruit can be pierced with a toothpick; place in jars, cover with boiling syrup and seal. Blood peaches are especially attractive put up this way, and generally take the blue ribbon when exhibited.

Let cucumbers lie in salt water over night. Next morning drain and pack closely in glass jars. For each quart of pickles allow a pint of cider vinegar, a tablespoonful of mixed spice and a half cup of sugar; boil, pour in jars and seal.

Miss M. M., Fairview, Pa.—For cucumber pickles take 1 gallon of vinegar, 1 cup of sugar, 1 cup of ground white mustard, 1 scant cup of salt, ½ cup of mixed spices, 1 cup of grated horse-radish. Mix all together cold and put the cucumbers in as you gather them, without heating either the cucumbers or the vinegar. You need not heat, as they will keep. They are fine.

DILL PICKLES.—Take cucumbers 3 to 5 inches long, if not too thick, wash them well and place a layer of grape leaves in the bottom of a crock or keg, then a layer of cucumbers, two or three apples, quartered without paring, a few bunches of green grapes or stalks of pie plant, two or three slices of onion, two handfuls of mixed whole spices, two or three handfuls of dill tops and seed. Repeat until the crock is full, placing a layer of grape leaves on top. Dissolve half a pound of salt in 8 gallons of cold water; pour this over until the pickles are covered. Weight down with a clean board and stone.

SPICED CUCUMBERS.—Take 1 bushel of green cucumbers, peel, slice and put in salt water that will hold up an egg. Rinse off in the morning. Take 2 quarts of vinegar, and sugar to taste, 5 cents worth of mixed spices, 1 pint of prepared mustard and let come to a boil. Put in cucumbers, let boil; can hot.

Mrs. C. F. G., West Valley, N. Y.—If you want your peaches to keep, preserve them, but if your jars are perfect and you have new rubbers, they will keep well canned as follows: Have ready a large preserving kettle of boiling water, put your peaches in the corn popper and immerse, then put in a pan until pan is nearly full. This method makes them peel with little or no waste. Make your syrup, allowing 1½ cups of sugar to each pint jar; peel your peaches and fill your jar; put on syrup until jar runs over, put on rubber and cover, close your jar and set in a boiler or deep pan of cold water, having a few old cloths in the bottom to prevent the jar from touching the bottom of pan. Boil one hour and allow to cool in the water. They are now ready to put away.

To pickle peaches, take 1 quart of best vinegar, 4 pounds of sugar, 1 tablespoonful each of ground cinnamon and cloves, 8 pounds of peaches. The spices are tied in little bags and boiled in the vinegar several minutes, then add the sugar and stir until dissolved; put in the peaches and scald, let stand over night; in the morning scald again and put in jars. To each jar put in a piece of horse-radish root. This recipe is also good for apple pickles.

For sliced cucumber pickles, take 3 quarts of sliced cucumbers, 4 large sliced onions, 1 green pepper, 1 cup of horse-radish, cut fine. Put cucumbers in layers, with salt sprinkled between; let stand 3 hours, squeeze dry, add 1 quart of vinegar, 1½ cups of sugar, 1 heaping teaspoonful of tumeric, 1 teaspoonful of cloves, 1 teaspoonful of mustard seed; heat through and can. Put in tumeric just before taking from the fire.

An easy way of pickling cucumbers is to wash the cucumbers as soon as you pick them. Pick when about 2 or 3 inches long, put in jars, put in 1 teaspoonful of black pepper and one of ground mustard, a few pieces of horse-radish, 1 teaspoonful of salt, and fill with vinegar. Leave the cover loose a few days then put on ring or wire and put away. These never spoil.

M. A. C., Newtown Square, Pa.—As our canned peaches have frequently been praised for being so delicious in flavor, as well as beautiful in appearance, I will give my way of canning. After selecting peaches that are ripe,

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but not soft, take the skin off and pack in sterilized jars; then make a boiled syrup (allowing 3 pounds of sugar to 2 quarts of water for eight jars of fruit) and pour over the peaches, and if the jars are not quite full, fill up with boiling water. Put tops on jars and screw loosely with thumb and finger, place in boiler with water to come almost to top of jars; cover boiler and boil 15 minutes. Take the jars out of boiler and seal tight.

Spiced peaches are a favorite with us, and are spiced in the following manner: To 7 pounds of fruit add 4 pounds of sugar, 1 pint of vinegar and a tablespoonful of cloves tied in a thin piece of white muslin. Put all together and boil until the peaches are tender enough to pierce with a straw. Then skim out the peaches and place in jars. Boil the syrup until thick and pour over the fruit. Let get perfectly cold before putting the covers on the jars.

For cucumber pickle, take 1 peck of little cucumbers, 2 gallons of cold vinegar, ¼ pound ground mustard, ¼ pound of salt, 2 ounces mustard seed, 1 ounce whole cloves, 1 ounce allspice and a few pieces of horse-radish root.

With plenty of flowers to be had for the picking, it's well to remember that many a hospital shut-in would be grateful for the dash of color posies would bring to the bedside.

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER II.—Continued.

And she was to come back, after all, for at the street door below she found herself face to face with Hugh Le Baron. He started guiltily.

"I wasn't coming up, Marise," he explained at once. "I mean, I was going to call up first and ask if I might, for a moment."

The boyishness of it made her smile. "And I am going out," she said. "It is music at the Livingstons'. Why don't you come with me?"

Her power over his feelings did not always extend to his actions. His headshake was unregretful. "If there is one thing I hate worse than the theater, it is a concert," he declared. "And a musicale in a private house is a degree worse."

"But you adore music!"

"Oh, music! I'm talking of musicales. You at least get some air in a concert, and you don't have to give up your seat and stand against the wall. When I have music, I want music—not a strangled party, bursting with suppressed conversation."

He felt hotly on so many subjects. Marise had a moment's shame for her own general indifference.

"Concerts are not like that," she argued.

"No; but to have five hundred people breathing about you in rows is enough to spoil anything. They come between you and the music—turn its current. Do you want me to tell you how I get my music? It is a secret, but I will tell you."

She had a sudden humorous recollection of her taxicab, grinding at its meter a few feet away; but Hugh's confidence was evidently a precious one and must not be checked.

"How?" she asked.

"Three or four times a winter I have Franzen come in, sometimes with the Quartette, sometimes alone, and lord, I have music!"

"Just you? The Franzen Quartette?"

Her astonishment set him smiling. "It isn't wholly ruinous—we are old friends. And what if it is! I haven't many dissipations. I lie flat on my back with a pipe, and they turn loose."

"And not another soul to share it?"

"That is where the mad king of Bavaria knew what he was about."

"But don't you feel guilty, selfish?"

"Not I! Silly convention, Marise. It isn't unselfishness that makes Fanny Livingston ask in every one she knows; it is because she loves a party better than she loves music. I have had my temptations—of course, I have always thought of having you. But it is music I want! Not human emotions."

She was oddly, ridiculously hurt. "Good heavens, my taxi!" she said with a note of laughter. "Well, I am sorry to leave you like this—"

"Do you really want to go?"

"Not especially. But I was restless. I wanted to go somewhere."

"Come to my place and we will make a little music ourselves." She only smiled. "Oh, you're as proper as Hannah," he scolded her. "You would undoubtedly go with me to any cabaret restaurant, full of beasts and swine, deliberately working up their appetites—"

"Hughie," she broke in plaintively, "there is a French saying that a waiting cab is like a gnawing worm. Couldn't we overturn the social code some other night?"

He laughed, his good heart ready to admit all his trying and importunate qualities. "Let me send it away and come up for a while," he begged. "There is so much to talk about! And you are in no mood for music, if you are restless; you won't get anything from it. Won't you, please?"

She was secretly glad to yield. It was curious how he had taken on value since that confidence about the Franzen Quartette—which he would not share even with her.

"You will have to face Hannah," she warned him. "She will be furious."

"We can slip in with your latch-key, and perhaps she won't hear us," was his manly proposition, but Marise scorned to evade, and rang her doorbell with an effrontery that was humorous until Hannah's silent disgust was confronting them. Then she stepped forward without explanation or apology, mistress of her household, dropping her cloak into the unwilling arms.

"I shall not need it," she said serenely, and passed on into the drawing-room.

Hugh followed, twinkling with silent laughter. When she had settled herself by the fire, he stood over her in mocking contemplation, still so amused that she had to give him his cue.

"Well!" she said tolerantly.

"Oh, Marise, you a democrat, you close to the heart of the people!" His laughter came out. "You the apostle of liberty, fraternity and equality—

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9613.—Ladies' blouse. This overblouse features the popular abbreviated kimono sleeve. Sizes 36 to 42 bust. Size 36 requires 1⅝ yards 36-inch material.

9752.—Ladies' and misses' dress. One finds sash ends arranged in a bow and posed just over the right hip. Sizes 16 years and 36 inches bust. Size 36 requires 4⅞ yards 36-inch material and ⅝ yard 15-inch material for collar.

9051.—Ladies' one-piece apron. As easy to make and as it is to put on is this comfortable style. Sizes 36, 40, 44 and 48 bust. Size 36 requires 4¼ yards 27-inch material with ⅝ yard 36-inch contrasting.

9044.—Girls' one-piece dress. The serviceable little frock shown is made with an inverted plait at each side of the front and back. Sizes 4 to 12 years. Size 8 requires 2⅞ yards 36-inch material.

9315.—Child's dress. A suitable little play frock that includes bloomers combines plain and checked materials. Sizes 1, 2, 4 and 6 years. Size 4 requires 1⅝ yards 36-inch plain and 1⅛ yards 27-inch plaid.

9740.—Ladies' and misses' two-piece skirt. The front gore of this skirt is applied to form pockets. Sizes 16 years, 26 to 32 waist. Size 26 requires 2⅝ yards 40-inch material and ¼ yard 27-inch lining.

9755.—Girls' dress. With the side-buttoned skirt is worn a smart Russian blouse with short sleeves. Sizes 8 to 14 years. Size 8 requires 2⅝ yards 36-inch material with ⅜ yard 36-inch contrasting and ⅝ yard 36-inch lining.

9371.—Child's yoke dress. The sleeves being in one with the body makes this an easy style to make. Sizes 2, 4 and 6 years. The 4-year size will require 1⅞ yards 32-inch material with 1⅛ yards banding.

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with the best trained servants in New York! Can't you see the joke?"

She looked more startled than amused. "I am democratic," she said hotly, because of that instant of doubt. "If there is anything I have learned out of life, it is that. 'Write me then as one who loves his fellow men.'"

"It can't be done!" Hugh brought up a chair with a protesting sweep. "I tell you, if you have brains, taste, discrimination, and the great luck to be born into the educated classes, it is rot to pretend that you can love your fellow men. It is dishonest. You can't."

"Yes, you can, Hugh. Tonight I tested—"

He interrupted. A generation of indignant ladies had not been able to break Hugh Le Baron of interrupting when his blood was up.

"I walked down Fifth Avenue this afternoon about five o'clock, and I looked on my fellow men and women—oh, lord, the women! Their painted red mouths and their pinched, tilted feet and their silly, empty eyes—their silly, empty souls! And the common voices and the overfed faces of the men—all animal and no spirit. I hated them. I hated them so that if the street hadn't been pretty well paved down, I should be at this moment in the lock-up; my hands ached for a stone. It is right to hate them!"

"It is not only wrong, but it is stupid," said Marise strongly. "It is seeing a part instead of the whole; it is ignoring the fact that you have had every chance and they none—none. Perhaps the very persons you are hating are wonders when you know what they have come from, how far they have brought themselves up the long hard way. For you to sit up there where you were born and to throw stones down on them—I tell you, Hugh, take any dozen of them and live with them for a year, and you will have found in all of them qualities—courage, generosity, kindness—that will wipe the hate out of you. You will come out humbled, and marveling that they are, after all, so fine."

He shook an obstinate head. "It is the proper sentimental thing to say so, but I don't believe it. I could have shown you dozens this afternoon who hadn't a teaspoonful of nobility in their whole composition. Love them? I think too highly of love to misuse the word like that. You may feel pity and appreciation, but you don't feel love."

"I feel something that makes me give the greater part of my life for them. If that is not love, I don't know what love is."

He stared at her, forgetting their argument. "What love is," he repeated. No—you don't know what love is."

She had only to frown, the least little shadow of a withdrawing frown, and he had jerked himself to another attitude and another subject.

"Why were you restless?" he asked. "Had anything happened?"

She could not tell him what had happened. If she confessed that the beloved little face had been given back to her, the shy miracle might never repeat itself. Yet she longed to hover near the secret.

"I had visitors," she said. "A poor little blonded waif was brought for me to look at. She had been dropped on a canal boat when she was two years old and taken along like a stray puppy. It must have been about the same year, too."

"Well?"

His startled interest surprised her. "Oh, it was impossible," she explained. "There was not a line, a suggestion. She had gray eyes, but they were lighter than Mary's. This was a forlorn, spineless little rag of humanity. Mary had force, character."

"But, my dear girl—" Then he broke off, hating what he had to say.

"You think that life could have so changed her?" She faced it bravely, then shook her head. "Oh, there would be something, some trace of what she had been. Surely, Hugh!"

"How had it happened? How did you escape knowing of it at the time?" She told the story, baldly, as May had told it, and was distressed to see his growing excitement.

"Why, Hugh, I sat beside her, like this," she insisted. "I studied every line, I made her talk. If she had been a negro it couldn't have been more impossible!"

He made it worse by pretending to be convinced. Hugh pretended so badly! "Yes, of course. Yes, I suppose you would have felt—seen—something. If not at the time, then after—Marise! What is the matter?"

She had risen slowly to her feet, and her face between her clenched hands was startlingly white. She made a pitiful effort to speak in her every-day voice.

"Why, I did—see something. After she had gone. I saw—Mary's face. For the first time in years and years. I saw it, and then it was gone. But I can't—really—believe—" Breath failed her, but she seated herself again, bravely erect, and took her hands into a quieting clasp, as though she told herself, "I must not!"

He shaded his eyes from her courage. "There was no mark on Mary, no least scar that you would know?"

"No, nothing. Only the clothes she went away in. The simplest little white corduroy coat—but the white silk lining had tiny pink roses on it. * * Mary did love those roses! * * * Ah, Hugh, she could not have changed into—that. I know my baby. I would rather she were this May Laguna than never find her—I mean that with all my heart. I could make the best of it. But I simply know it isn't true, that's all. I was startled for a moment; but the little face was sure to come back some day, and having the girl brought here would account for it, don't you see? No; that is not my child." And she leaned back triumphantly, her fright forcibly put from her.

"Of course, you are right;" he spoke more heartily. "But don't you want me to see this girl and trace her up a bit, simply so that there need never be a question? Have you kept her address?"

"She is coming here tomorrow morning—I mean to find work for her. I will look into it myself, to convince you." She smiled. "I know, you see."

"Yes; I suppose you do." He really was convinced. "Well, if I can help—if there is anything on earth I can do—you know that, Marise."

"Yes, I know."

They fell silent, but for once it was Hugh who held her thoughts. He was always so eager to help, to take any earthly trouble for her. In her preoccupation, she had grown to accept this as a matter of course, even as a right, but tonight it touched her freshly. She felt guilty for the past, and there was a sickish little fright for the future—for he did not want her when he had the Franzen Quartette. She longed to say something more than kind; even for a homesick moment, to put her hand into the hand lying on his knee. Then she shook herself, bodily, and smiled under his questioning glance.

"Let us talk about your affairs," she said. "I am so tired of mine. Are you building anything very beautiful?"

"Oh, rather. I want you to see the Morton house when it is finished." He was so happy to tell her about it that she was more than ever touched and ashamed, and her self-reproach kept coming between her and what he was saying. He thought that he was tiring her, and very soon rose to go.

"This is not to count against me as a visit," he said. "It was merely an accidental encounter."

She made a purposely conventional answer—that it was good of him to come or something like that; and he went away visibly saddened—not dreaming how her heart cried out after him.

And he must never dream it. She had clearly forbidden Hugh to love her, and she knew that her wise coolness had done its work; he might be wistful, but he did not suffer, he lived his life contentedly and followed many interests. He might at any moment marry some one else, some woman who dared let him come near. Until tonight, Marise had not realized how that would hurt. She had not wanted love in her life—she had simply wanted her child; and she had not guessed how much Hugh meant to her until he had told her in serene confidence that when he had the Franzen Quartette, he did not want her. Every time she turned back to that, it wounded her afresh, till at last it struck from her a broken "Hughie!" that was close to tears.

"But I must not, I must not!" she exclaimed, and again she took up the burden of her strength. The new longing must be put down instantly, tonight, strangled without flinching; for of all men on earth, Hugh Le Baron was the least fitted to abide by the situation if she found Mary.

The two in one household would be unthinkable. She faced it in detail, that she might clear her brain of misting desires. Hugh hating all things common, even criminally fastidious, impatient and outspoken—and this waif of destiny, who could have had no chance; no, it was forever impossible. If Hugh was growing more importunate—and tonight she could not deny that he was—she must see less of him. There could be no weakness. Marise settled it strongly there before the fire, then went up to bed, captain of her soul.

In the morning she busied herself with May Laguna's future, and, after much telephoning, found a possible opening for her in a feather factory—feathers seemed rather in May's line. And then, of course, the girl did not come. It had been written on her that she would never come when she was expected. Marise was at first only relieved; and then that absurd fright that Hugh had given her began to revive. It was utter nonsense. One good look into the vapid face would lay it forever. And yet the discovery of a waif who had slipped through the net of her search, those first years, was disturbing. For the sake of a clear record, May's origin should be looked up. After waiting restlessly until mid-afternoon, Mrs. Jaffrey called up the office of Engel and Weeks and asked for Mary Healy.

(To be continued)

THE BLOSSOMING OF THE CINNAMON VINE

EDGAR L. VINCENT

THE old cinnamon vine takes its time to climb up the trellis on our front porch. All through the early summer months it makes its way leisurely from round to round of the ladder until, at last, it reaches the highest point of the season. And when the delicate round buds begin to gather in clusters on the tendrils of the plant, I watch them closely, for I know that soon they will burst and fling their delicious perfume out upon the air, and I do not wish to lose a single moment of the rare enjoyment which comes with that event.

There comes a morning when I open the front door and there it is, that faint, almost imperceptible fragrance, drifting from the opening buds, and I know that once more the mystery of the beautiful cinnamon vine challenges all explanation. For who knows when the tiny globes of green burst to give expression to the perfume that has been locked up within their walls? No eye is keen enough to see that wonderful unfolding. No sound, nothing to attract the hearing. Silently, with no obtrusion, the fragrance comes floating away to bring joy to the heart of him whose soul is open to receive it.

How like this is to the fragrance which comes from the presence of some people we know! What is this power to charm and cheer that greets us the moment we come into the place where these men and women are? We look into their faces and we see calm and peace and quiet that we do not know ourselves. When they speak, the sound of their voices brings rest to our tired souls. But whence comes this influence which so strangely takes possession of us? We long for it to come into our own lives. We seek it in many ways, but in vain.

"Tell me," we plead, "the secret of this sweet quietness which holds you so steady in the midst of all life's rush and tumult. I need it, oh, so sorely! For my life is torn with distracting emotions. I reach out in every direction in search of this help and my hand touches nothing. When I take it back, it is as empty as when I put it out. But you know what I need. Tell me what it is!"

Then we learn that the one thing we need is the Spirit of God, dwelling all the time in the heart. That it is which, like the rare perfume of the old cinnamon vine on the porch, radiates from life to life, unseen, gracious, powerful to keep the life calm and pure and steady in the world of noise and strife and confusion. We find them here and there on the road of time, these pure souls of the still heart. They go in and out among us unruffled by the trying things of the day. They are good and kind and true, where the most of us fail so utterly. Their faces show the peace which passeth understanding. But how shall we come into that same peace? Can we find it if we strive and give ourselves to good works and to tears?

Beloved, this is the pathway we seek: Heart to heart with the Old Book; low on the face in penitence for sins; deep in prayer that God will bless with forgiveness for the sake of His dear Son and grant us the indwelling of the Holy Spirit. But how can we do it? Life presses so hard. From morning till night we must work and hurry and press on toward the sundown which will be here all too soon. Yes, but here and there, if we seek them, we shall find moments when we may be alone with God. May be in the quiet of the kitchen when the little ones are out at their play; or up in the hay mow, or under the shade of the tree in the back yard. Somewhere, anywhere if we will it so, we may know the joy of nearness to God, the nearness which will make our lives sweet and radiant and full of the perfume of the Great Presence. So shall we be blessed, and so will our lives be a blessing to all we meet.

Farm Happenings

AS TOLD BY THE BOSS.

A number of grade ewes have been bred for early winter lambs. These ewes were bred during July and early August, so that the lambs will come about Christmas time and ready for the hothouse lamb trade during the winter and early spring months.

Several small lots have recently been seeded to Dwarf Essex rape to provide fall pasture for the pigs and lambs. The same fields that were used for early spring pasture were used for this purpose.

The heaviest of the spring pigs were recently put into a separate lot for fattening. These will be ready for market earlier than the average of the crop, and, as a rule, command a somewhat better price than the main crop, because of being ready for market when hogs are scarce.

We still have our wool on hand, as there has been no ready sale for it. We are planning to sell it through the County Association. It is well bagged and stored where it can be kept in good condition for several months if necessary.

The corn is coming along in splendid shape, and will mature if frost does not come too early. We plan to put as much of it in the silo as possible, as it can be used to best advantage in the form of silage. We want it well matured, as we have found it to be a more satisfactory feed when matured than if put in the silo in a green form.

We plan to feed the usual number of steers this fall even though they lost us money last year. Our experience has been that the most money is made from live stock or farm crops when the same amount is raised or fed every year. It may be that this will be a good year to feed cattle, as a lot of people who fed last year will not put in a supply of feeders this fall.

Our protein feeds have been purchased through the local co-operative association. In the past it has been well to purchase these feeds early, and we hope that it will be the same this year. At any rate, it is a splendid feeling to know that the feed is on the farm when it is needed.

I recently passed a farm on which there was a flock of sheep, but the lambs had not been docked and none of the buck lambs castrated. The buck lambs were thin and the whole outfit a sad looking lot. They were dirty and filthy and not in shape to sell. If this farmer had spent a couple of hours in looking after the lambs early in the spring they would have been worth a couple of dollars more per head at this time.

The breeding ewes that have passed their stage of usefulness because of old age, being poor mothers or bad udders have all been eliminated from the flock. We have been following this policy for a number of years and have found it a paying practice.

Trees grow; they grow in height, in volume, in value and in quality.

Ensilage Notes

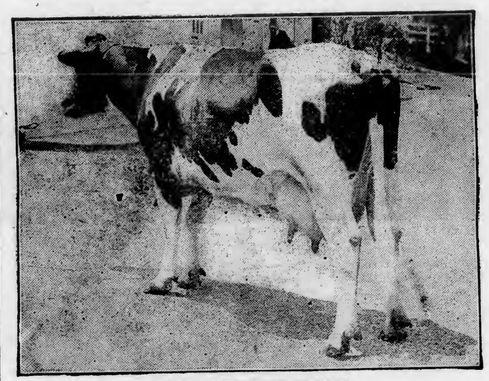
E. B.

It is important that corn for the silo should not be cut until nearly mature, as the corn at maturity contains about five times as much dry matter as it does at the tasseling stage. When it has reached the denting, or glazing, stage, it makes silage of better quality. The plant is less watery at this stage and the sugar has been largely converted into starch. Therefore it is unprofitable for farmers to cut young, immature corn for silage or soiling purposes.

In filling silos the ensilage should be tramped down with especial care near the edge, where, owing to the friction of the wall, it will not settle as well as elsewhere. When it has been rapidly filled it is a good plan to leave it a couple of days to allow it to settle, and then re-fill.

Where the silage has been thoroughly packed, none should spoil near the floor and walls. But at the top, where it is exposed to the air and is less solidly packed, a certain amount will generally spoil. To mitigate this, one should place old, wet hay, or some other material that will pack well, over the top of the silage immediately after filling. This covering should receive a thorough wetting so as to hasten the process of settling. A few barrels of water may be run over the top to good advantage.

New York.



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Lady Aaggie Echo Hengerveld is owned by the Toyon Farm Association, Inc., San Francisco, California, and was bred by Mr. Albert E. Smith, of Sumas, Washington. Her sire is Paul Aaggie Oakhurst 55387, and her dam is Lady Echo Hengerveld De Kol 2nd 159461.

She freshened at the age of three years, seven months and thirteen days, and her best seven-day official production, made in the early part of her lactation period, is 684 pounds of milk containing 25.49 pounds of fat.

Lady Aaggie Echo Hengerveld unites the blood of great transmitting, animals, being by a grandson of Aaggie Cornucopia Pauline Count 29642 and from a daughter of Sir Johanna Canary DeKol 44034, the sire of Spring Brook Bess Burke 2nd 131387, the only cow in the world with three seven-day records above 35 pounds in connection with three yearly records above 1,000 pounds of butter.

Bred along such high producing lines, it was natural to expect a creditable performance from her. To have her break a world's record under the conditions existing shows her to be a remarkably persistent performer, for Lady Aaggie was purchased several months after freshening from the A. E. Smith Company of Sumas, Washington, and unquestionably the long journey and the complete change of climate and environment had some effect on her total production. It is fair to presume that any cow that can break a world's record under such conditions is a promising prospect for still greater honors.

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MODERN ORCHARDING

By A. N. BROWN

THE modernizing tendencies of the present are largely due to the progressive development along lines of known activities, supported by experimental and scientific practice and research.

Things are not done blindly. Our efforts are founded upon basic knowledge. The fundamental fact is the rule for our guidance in what we do. And this is the reason we can make a distinction between present-day orcharding and that of by-gone days. Science and practice have made no more progress along any line of human endeavor than they have in orcharding. Anyone not recognizing this fact had better remain out of the business.

Modern orcharding consists in a knowledge of soils, location, manures, cultivation, trees, varieties, pruning, picking, packing, transportation and marketing. It means, further, a knowledge of equipment, of insects and diseases, of climatic effects, of chemical properties in the destruction of injurious insects and immunizing the tree against plant diseases. All this requires study and care, wisdom and management, and he who is not willing to devote his energies and apply them in the pursuit of highest attainment in orcharding cannot be classed as a modern orchardist.

However, the problem is not so difficult after all, or as complex as it at first appears. Briefly, there are a few fundamental facts which we must follow to be successful. Nature is charitable and kind, and will respond to our efforts even though we fail in many ways of doing the necessary things. Were it not so the world's progress to higher planes would indeed be slow.

The first essential in orcharding is location. An orchard, to succeed, must be located where the maximum of both air and surface drainage can be secured. This is found on elevations, not on low or flat land, unless ravines are at hand to force circulation. Trees must have air, and roots be above water levels.

SOIL.—Soils should be alluvial—that is, open—so as to admit of root expansion, of free movement of food-laden soil waters, and of aeration. Such soil will conserve moisture and will encourage necessary soil bacteria. A sandy loam with an open clay subsoil is ideal. All cannot have this, but in selecting a soil these special characteristics should be sought in so far as possible.

TREES.—Trees have an individuality, just as much so as members of the human family or the animal kingdom. Failing to recognize this is perhaps the primary cause of many failures in orcharding. Trees should be selected that are from a hardy strain, that by bud selection have been bred up to a high standard in vigor, in health, in disease resistance, in annual bearing proclivities and in productiveness.

These attributes of the individual tree are distinctive; they are not impossible. They are attainable because they are fundamentally the tree itself, and under proper environment are either of a high or low order. A tree should not be purchased because it is a tree, simply, but it should be purchased because of its inherent qualities, which have been developed to the highest standard. In setting an orchard my preference is to plant one-year-old trees. In peach, June buds are preferred in southern localities.

VARIETIES.—A general rule to follow in selecting varieties is to take such varieties for general planting as have succeeded best in the particular locality where the orchard is being planted; but even following this rule, judgment should be used. The individuality of the tree, its special characteristics, as herein referred to, the market demand for certain varieties, the shipping qualities of the fruit, etc., should be considered. A variety may be splendidly adapted to one section of the country, while it would utterly fail in another. In my section—central Delaware—Northern Spy, Baldwin, Greening, King and such varieties will not succeed, while they lead in northern latitudes.

With us Transparent, Williams, Duchess, Nyack's, Grimes, Wealthy, Jonathan, York, Stayman and Delicious are the leading and most profitable varieties.

We have here the extremely early and early fall and extremely late varieties, with an absence of summer varieties, which are not suited to the marketing conditions of this section.

This year's apple crop bids fair to be the largest in years. In New York state the prediction is 13% above the bumper crop of 1918 and 126% above last year

PREPARATION BEFORE PLANTING.—Land should be plowed and well cultivated before planting, in order to hasten nitration of vegetable matter in the soil, increase its water holding capacity and reduce it to a fineness necessary for best root development. The land should now be marked out at such distance as is desired. Peach trees should be planted 20x20 feet; apples, for permanent, 30x40 feet. Fillers can be used when planting an apple orchard, by using an early variety for the filler, as they are upright growers, with less spread than late apples have.

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Some Reasons Why Clover Fails

A. E. GRANTHAM

UNDER the present conditions of farming there is no crop as uncertain as red clover. Many are the theories advanced as to the cause of clover failure. A study of the situation leads to the belief that there are several contributing causes, any one of which alone may be sufficient to limit the yield. In practice we find the following conditions with reference to getting a stand of clover. First, the seed may fail to germinate, or if it does germinate very little growth is seen by the time the wheat or small grain crop is removed. Under other conditions the clover may be a good stand and persist under winter and then disappear before spring. In other instances clover will make a fair growth until the nurse crop is removed and then finally disappear by the end of the summer. So difficult has become the situation that many makeshifts are being used in place of the ordinary red clover. Farmers are increasing the percentage of timothy in their seedings, and substituting, in many cases, alsike for red clover. It is rare today that we find a good yield of ordinary red clover, and while alsike will make a good growth in a mixture, it apparently does not have the effect on the fertility of the soil that we find following a crop of red clover.

One of the chief difficulties of securing clover seems to be due to the lack of organic matter in the soil. Every practical farmer has noted the beneficial effect of a slight surface dressing of coarse manure, or even chaffy straw, in securing a stand of clover. This is due, primarily, to the mulching effect of the material, holding the moisture so that the clover can become well established during the early spring. A great many of the failures are undoubtedly due to the fact that the clover perishes from lack of moisture in the early spring days.

The second cause is probably lack of lime in the soil. Since clover is a legume, it demands a neutral or alkaline soil for best development. Experiments far and wide over the country have shown the beneficial effect of applying lime on red clover. Without a fair supply of organic matter in the soil the lime cannot give the best results. Along with the use of lime and organic matter comes the value of thorough inoculation of the clover. On many farms the organisms that gather the nitrogen from the air through the roots of the clover have become very weak or have entirely disappeared from the soil. If the soil is sweetened and supplied with a fair amount of organic matter it will be found helpful to reinoculate the red clover.

On some lands the failure may be partially due to the lack of available plant food. The clovers are heavy feeders on potash and lime, and if manure is not available some mineral fertilizers should be used to stimulate growth. One of the most helpful means of securing a stand of clover under unfavorable conditions is to top dress the wheat during the late fall or early winter with a very light dressing of stable manure or short, chaffy straw. Two or three tons per acre would be an ample quantity and this will have a beneficial effect on the wheat, and by spring will afford a lodgment and covering for the clover which will enable it to secure moisture at that critical period when the plant is starting growth. Anyone who has not tried this will be surprised at the effect on the stand of clover.

Finally, good seed is important. A difference of a few cents a pound means very little in the end if a good stand can be secured. Only seed of known vitality should be used. This is particularly important since the rate of seeding should be governed by the percentage of germinable seed. Another practice that is aiding in getting better stands of clover is the harrowing of the wheat after the clover is seeded, or the use of a drill grass seeder, which covers the seed lightly. The latter machine will pay for itself several times over in a few years by the increased stand of clover. However, if the soil is poor in organic matter and lacks lime, this method of seeding will not entirely overcome the difficulty.

The failure of clover is not the result of any single factor, and the case may be somewhat different on various farms, but the above conditions should be looked into on every farm before one has decided as to the best method of overcoming the difficulties.

Selecting and Maturing the Pullets

J. RAYMOND KESSLER

TODAY, with feed at heretofore unheard-of prices, there is likely to be little profit in the poultry flock unless the best of the year's brood are selected and properly prepared for the winter's work. Now is the time to pick out the best pullets and fatten the rest for market before winter comes, requiring heavier feeding of the flock than during the summer when they could secure a large part of their food from foraging.

"Modern orcharding requires study and care, wisdom and management"

To begin with, it rarely pays to select pullets to keep over the winter, that have not reached a reasonable state of maturity by early fall. As a usual thing, fowls hatched much later than the early part of May will not begin laying until spring, thus being a dead loss to carry over winter. Pullets that have reached good size by the latter part of September can, with proper feeding, be depended upon to produce a good return during the coming winter.

In selecting the pullets good physical development rather than inclination to begin laying prematurely, should be the guide, since with a robust fowl as a basis, production can be very readily encouraged, which will result in continued production throughout the winter. The robust fowl has the physical development to make continued production sure. However, fowls producing eggs prematurely, that is to say, before their physical development is complete, rarely last the winter out, since they have not the strength to stand the strain.

Maturity must necessarily vary with the breed. Leghorns, for instance, mature before birds of the general-purpose breeds. For Leghorns five months of age is plenty early for the first egg to be laid, and with the general purpose breeds six to seven months is about right. However, as I have said, physical development is a better guide than age.

Maturity not only means a well developed frame, but also a large crop development to enable the fowl to consume a large amount of food and a reasonable supply of fat, for fat is necessary to sustained production. Very few will dispute the fact that in cattle the big milk producer is usually the largest consumer of food. This holds good with hens, and it is certainly poor economy to select hens with small crops, as only by the consumption of large quantities of food can heavy winter egg yields be obtained.

Many make the mistake of leaving the pullets out on range until the last minute and then rushing them into winter quarters. Nothing will do more damage to production than this last minute rush. The pullets should be selected and placed in winter quarters some time in September, before beginning to lay. They should still be allowed range and the winter confinement brought about as gradually as possible. Overcrowding must not be practiced if good winter results are to be obtained. Five square feet of floor space per hen for winter confinement is about right.

After the pullets have become accustomed to the new winter quarters, feeding with a view to encouraging production, should be started. For egg production the food is naturally increased both in quantity and richness. This must be done gradually and with judgment, lest the fowls become either surfeited with food or over fat. The following plan of feeding has, with some variation, been followed by the writer with success for a number of years:

The hens find in the deep litter of the poultry house floor each morning a grain mixture consisting of equal parts corn, wheat and oats. The wheat need not be first grade. Some Kaffir corn may be used to advantage in the mixture. The amount allowed at this feeding is about one quart to every twenty-five hens, varied, of course, to suit the appetites of the fowls. After frost has killed outside greens, green food, consisting either of cabbage, sprouted oats or mangels, is fed about ten o'clock. Only such amounts as will be cleaned up in a short time are allowed.

At noon a moist mash is fed, consisting of the following mixture: Two pounds wheat bran, 1 pound linseed meal, 1 pound gluten, 1 pound corn meal, 1 pound middlings, 1 pound ground oats and 2 pounds beef scraps. To four parts by measure of this mixture is added, when fed, one part short cut alfalfa or clover that has been soaked in hot water for several hours. This is thoroughly mixed and fed in the proportion of about two quarts to twenty-five hens. The mash should not be sloppy, but only moist. The amount must be varied to suit the appetites of the hens. It should all be consumed in ten or fifteen minutes, else the feeding is too heavy. Grain should again be fed an hour or so before dark in about the same proportion as was allowed in the morning.

Under this method of feeding, the beef scraps, gluten and linseed meal are allowed in only half the proportions to young pullets just starting to lay, and the amount allowed is not as large. The richness and quantity are gradually increased so as to encourage production. This is always done slowly, however, taking from a month to six weeks to put the flock on full rations. If production has not by that time come up to the desired point the beef scrap, linseed meal and corn meal may be increased somewhat. When a reasonably steady production has been established the ration should be brought back

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SEPTEMBER 15, 1920

SOME few years ago there died here in Philadelphia an old lady—a member of the Society of Friends, a Quaker, as we say—who had discovered a very wonderful secret, and who had spent a good portion of her life in revealing, as best she could, this secret to others. She had put her discovery into practical use in her own life, with the result that her influence was, and still is, felt, not only here in her native city, but throughout the English speaking world—yes, and has touched the lives of many of other tongues.

And her work still goes on, for Hannah Whitall Smith put her discovery into writing, and "The Christian's Secret of a Happy Life" is still being read by increasing thousands, whose lack and longing are being satisfied by God through the instrumentality of this little Quaker lady, who years ago He took home to Himself.

Mrs. Smith wrote several other good books, but this one—the revelation of the "secret"—has caused, and will cause, her name to be remembered with deepest gratitude by thousands who have forgotten, and will forget, the names and fames of the so-called "great" men and women of their time. Have you read it?

And yet the "secret" is nothing new—it's as old as the New Testament. The Apostles knew it—the Apostolic Church lived the happy life that Mrs. Smith has written about; and in each generation since the founding of the Church, some of its people have "discovered the secret" and lived the truly happy life which is the normal Christian life, but which, alas, is not the life of the majority of Christians. Mrs. Smith simply discovered it for *herself*, and then explained what she had discovered, so clearly and so simply, that she has helped thousands of others to discover it for *themselves*.

Mrs. Smith called it the "Happy Life"—the first edition of her book was published in 1875—but she would have recognized as the same thing what we are calling the "Victorious Life" today, and which I have tried to tell something about in these columns from time to time during the past year. Yes, the life that God *intends* His children to lead is happy and victorious—and more, much more than these words can express.

Many of our Practical Farmer readers have written to me for more information concerning this "life that wins," and some of those have been led into the full revelation of it and are glorying in it today; but others haven't seemed to be able to quite grasp the truth of it, and I want these and any others who feel the lack of, and a longing for, victory in their lives to have the opportunity to read Mrs. Smith's plain, simple story in "The Christian's Secret of a Happy Life." So I have secured a number of copies of the book and will be pleased to loan one to any reader of this editorial who will ask me for it. It is not necessary to send any postage—just a card or a note addressed to me, personally, will bring the book.

EDWARD T. WALKER.

The Mission of the Community Fair

WE are right in the midst of the season of state and county fairs, and in many rural communities this is the gala time of the year—the long anticipated get-together time for a comparison of crops and products and a general interchange of good-fellowship and mutual interest. There ought to be such an occasion in *every* rural community *every* year, for while we can't all have a state or a county fair in our midst, and the distances and conditions sometimes make it inconvenient for us to attend these events, we *can* and *should* have a *community* fair every summer or autumn, and everyone of us could and should attend and exhibit at this local event.

And it's our belief that the cultivation of these often neglected community fairs is of even greater importance than the booming of the larger county and state fairs. For here neighbor meets neighbor in friendly competition, where all know the conditions and circumstances under which the exhibits were made or grown and a comparison of methods and results is of inestimable benefit; here better acquaintance begins and friendships are formed that eventually lead to the formation of the much-to-be-desired co-operative buying and marketing, live stock and testing associations—the sort of thing that puts farmers on an equal plane of protective organization with other industry.

And not the least of the merits of the community fair is that at it townsmen and farmers—mutually dependant on one another to a greater extent than is ordinarily realized—meet in a way that develops an understanding and sympathy between them that makes the community life better and smoother.

For, mark you, the country town is a part of the country. It is time for country townsmen to realize that the chief business of every little country village is *not* to grow into a city as rapidly as possible, but to serve the agricultural interests which surround it and from which it draws its prosperity, and to be content to grow wealthy by and with the development of these interests. On the other hand, every farmer should remember that his home town is his gateway to opportunity; through it must come the necessities and comforts for which he depends on the outside world, and the road to it is the first step in the journey of his products to the markets of the world.

Get together, then—understand one another better, pull together for a bigger prosperity for your community. And the little "street fair" or community exhibition in the village hall, enthusiastically entered into, is often the first and the biggest step in the right direction.

Would You Help Him?

"SURE I would help him. I believe in doing all I can for every man that is in a tight place."

So you would say if you were asked what your attitude would be toward the new man who has come to us in such numbers from across seas, and who speaks such a varied language, the speech of many countries, which stretch from Italy on the south, far away to the bleak northern shores of tempest-tossed Russia.

You would help if he were in trouble, of course, if you knew it. But stop a minute now and ask just what he is to you. Is he a "gink," or a "dago," or a "wop?" Is he a creature to be set away outside the circle of your everyday thought and consideration? Or are you looking upon him as a real fellow being, with sympathies and aspirations quite like your own? Is he so closely related to the life of this country today that you see in him a citizen of tomorrow, and one who will shape the destiny of this republic of ours for good or for ill?

And if you do recognize in this man of the foreign blood a fast-coming member of society and of national, and even international importance, what pains are you taking to show him now just what it means to be a citizen of a real republic, so that he may safely be trusted with the reins of government in the near future? Are you showing him by your good, kind, honest and true life that this is a country where those things count for most? Do you place within his reach the best papers and books, books that teach patriotism in its purity? Do you open your home to him and to his wife and his boys and girls? Is he in reality in your estimation a member of our great, whole-hearted, unselfish Americanism?

May be you have not thought just what you can do best to help this man and brother. Won't you do it now?

Farmers Lose a Friend

JAMES WILSON, Secretary of Agriculture for fifteen years, in the cabinets of Presidents McKinley, Roosevelt and Taft, died on August 26th at the age of 85. To Mr. Wilson American farming owes much. His work in the Department of Agriculture was largely a pioneer service, for when he came to it the Department was employing hardly 2500 people, handling small appropriations and making little headway as a factor of importance in the country's agricultural development; when he left it the number of employes had more than multiplied by four, it was expending large sums of money efficiently and had assumed a real and progressive leadership in the agricultural expansion of our land.

Under his administration the war on tuberculosis in cattle was begun, a serum for hog cholera was discovered, the beet sugar industry was fostered, many valuable crops were introduced into this country from abroad, and a systematic effort to conserve our forests and to replant deforested areas was instituted.

Born in Scotland, Mr. Wilson farmed in Iowa, was elected to the Iowa Legislature, represented an Iowa district for three terms in Congress, served on the Iowa Railway Commission, was Regent of Iowa State University, and headed the staff of the Iowa College of Agriculture just prior to his call to the head of the Federal Department of Agriculture.

In the history of the phenomenal development of agriculture in our country the name of James Wilson occupies—and deserves—a prominent place.

Bulletin Helps for Farmers

"For what operations can I use the tractor? Where will it displace horses in whole or in part? How many horses will it displace on my farm?" These are the questions that interest every prospective tractor owner. The Federal Department of Agriculture undertook some investigations to get at the answers and the results are set forth in Farmers' Bulletin No. 1093, "Influence of the Tractor on Use of Horses." Worth reading—worth having for reference.

If you've been bothered by cut-worms this year get ready to combat them next year by sending for Farmers' Bulletin No. 739, "Cut-Worms, and Their Control in Corn and Other Cereal Crops," a revised edition of which has recently come out.

Either of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

Fruit juices are good throughout the year. Beverages, syrups, sauces, gelatin and frozen desserts may be made with their aid. Cornell has a bulletin on fruit juices; the College of Agriculture at Ithaca (N. Y.) will send it on request.

Modern Orcharding

(Concluded from page 265)

In central Delaware we plant orchards of peaches and apples together. We plant by the diagonal system, with the idea of removing the peach trees at 8 or 9 years old, when the apples have come into profitable bearing. The peach trees begin bearing at 3 years old, and by the time of their removal—8 years—they will, under proper care, pay for the land and trees, fertilization, cultivation, spraying, etc., besides paying taxes, equipment, etc., and 6 per cent. on the investment, thus leaving the orchard absolutely free of cost to its owner.

The diagonal method of planting is to start your first row to be planted with an apple tree, then start the next, or adjoining, row with a peach tree, then alternate the peach and apple in each row. Continue on this plan until the orchard is planted. Planting in this manner, 20x20, gives us 108 trees per acre, half apple, half peach. When the peach trees are removed the permanent orchard of apples will be 30x40 feet apart, a very suitable distance for Delaware conditions.

Our next move is to mark out the rows. Take two good, steady horses hitched to a medium sized plow, and a man capable of running straight rows, and have the marking properly done. The next step is digging the holes, and this is a highly important part of setting an orchard. We have our tree holes dug 12 inches square at the top and 12 inches square at the bottom, and 14 inches deep. We then put 2 pounds of raw bone meal into the bottom of every hole. Don't use finely ground or steamed bone—coarse bone meal is the only bone to be used. Over this bone place 2 or 3 inches of soil. Now take the tree as it has come from the nursery, cut off all broken roots, and cut back the remaining roots to within 6 inches of the body of the tree, then cut out all the branches and cut main stem on peach to 18 to 24 inches and on apple to 25 to 30 inches. Next, dip the apple trees, roots and top, in a weak miscible oil solution, and peach trees, the trunk only—the roots never.

Have two men planting, one setting the tree, the other filling in the soil. The man setting the tree should set it into the center of the hole, holding firmly while the other fills in the soil; as this is being done, the one holding the tree should tamp down the soil with his feet. The filling should come within a few inches of the surface, when 2 pounds more of raw bone meal should be placed around the tree and two furrows with plow should be plowed to the trees. We now have the orchard planted, or started, in a way that will insure its future.

(Concluded in next issue.)

A Selling-Direct Experience

J. WESLEY RAY.

We have found in our farming experience that being able to produce a "bumper" crop does not mean that the farm ledger will balance on the right side. For years we toiled from sunup to sundown, plowing, sowing and reaping. We thought only of getting big yields. We dumped this big surplus on the market along with hundreds of other farmers for any old price. Our grain went to the local miller, who always had a hard luck story to relate to us. Our cattle and hogs went to the town butcher, who managed, some way, to take them at about one-half the market price, just to accommodate us poor old rubes. Our eggs and butter went to the village grocery in exchange for a few groceries.

No wonder that the city man made sport of us then. We deserved to be called rubes and hayseeds. It took some pretty hard jolts to awaken me and get me out of that old rut of just drifting along.

This section of West Virginia is not strictly a farming country, and, therefore, we have the disadvantage of not being organized, but I have learned a great deal about the selling end of the farming game.

When I have a few fat steers or hogs to put on the market, instead of taking what the local butcher offers, I butcher them myself and, equipped with a neat, clean wagon, I sell direct to the consumer, from house to house. We sell our vegetables, fruit, poultry and eggs, milk and butter in this way. We are building up a select trade in three towns nearby. Our products stand for the highest quality; we don't offer to make up on bad eggs or inferior vegetables, etc. Rather, we see that nothing goes in the wagon but the best. The culled fruit and vegetables are canned or fed to the swine.

I firmly believe that if farmers everywhere would sell their products direct to the consumer it would, in great measure, solve the vexing problem of the high cost of living. It is pure tommy-rot to contend that it can't be done; every farmer could do exactly what I and others are doing, and if they would do this where would the middlemen be? What would become of them? Why, they would have to get out and go to honest toil for a living.

Now, Mr. Farmer, here are a few figures: My investment in horse, wagon and equipment is about $250. Last year my gross sales off the farm amounted to something over $4,000, and I estimate that $2,000 of this is due to the direct-to-the-consumer plan of selling. So here we have it in a nutshell: If I had continued selling to the "sharks" I would have realized about one-half of what I did. But, thanks to this and other good farm papers, I have been put wise and I mean to profit by the knowledge. *West Virginia.*

OLD TED: HERO

EDGAR L. VINCENT

GETTING old now, aren't you, Ted? But you are a hero still. And how do I know it? This morning while we were going to the field with the farm team, Ted was marching along by the side of the horses as he is wont to do. Then suddenly he forgets, or did he stumble a bit? The strong foot of one of the horses strikes him on his paw. He gives a startled yelp and limps away into the bushes to lick his wound, crying for a moment piteously. Then out he soon comes again, with a bit of a limp in his gait, but with his head and tail up high, to go on with us as before. Hurt, but bearing it bravely. Who shall say that old Ted is not a hero, real, true, faithful?

Something of rebuke comes to me when I think of our old dog friend and the spirit in which he bears his troubles. What was it that came to me this morning? Things did not "go my way." I was sore about it, and disappointed. And I have not quite gotten over it yet. There is a sore place in my heart. It seems to me I have not been treated just right. Why should I not have my way about this thing? I think it would have been fair to me if I could have carried my point. But that did not seem to be the way it was to come out; and I am hurt and a bit out of patience about it. I limped away into the bushes to nurse my wounds, but I did not come back with firm step, face in smiles and a will to go on bravely with the day's work.

A shower came early this morning. It interfered with my plans for the day. I had not been looking for rain and last night I arranged for an outing with the folks at home; and here comes the storm! Why must it come just when it did? Ah, but if I listen I surely will hear a Voice whispering to me, "The meadows and the pastures will be the greener for this shower." The sun shines hot today. Too hot for comfort. I complain about it, for I had some work I meant to do. Leaning down my ear once more I hear the Voice calling to me: "The sunshine is ripening your corn. Your work can wait; mine must not. You would be sorry if it did."

The other day while cleaning out my cellar, I found a long potato sprout. It looked pale and sickly, but how far it had come through the twilight in search of fresh air and sunshine! I felt round in the half darkness to find the potato from which that slender shoot had its start, and I was surprised to know how many obstacles it had overcome. In one place a piece of a large timber was in the way. Was the sprout discouraged? Round the end of the timber it immediately began to feel its way. Again it was a box that stood across the path of the sprout. Up over the side it began to clamber, and it never was satisfied until it had reached a place where something of light fell upon it.

And I wonder if this is not what you and I are to do when we come to hard places in life—go round them? If the way is hedged up in one place, another way will soon open up, if we are only true and brave and trustful. When frost nips the pumpkin vines, it brings the red to the cheek of the apple. Storm fills the spring, waters the grass plants and revives all nature. Disappointment met in the spirit of old Ted, makes the nature stronger and better. When God says: "Don't go this way, my child," and we bow the head in humble, patient submission, we shall very soon hear Him once more whispering: "This is a better way. Take it and reach your heart's desire."

Teach me, oh, my Father, to know Thy will and to do it like a man!

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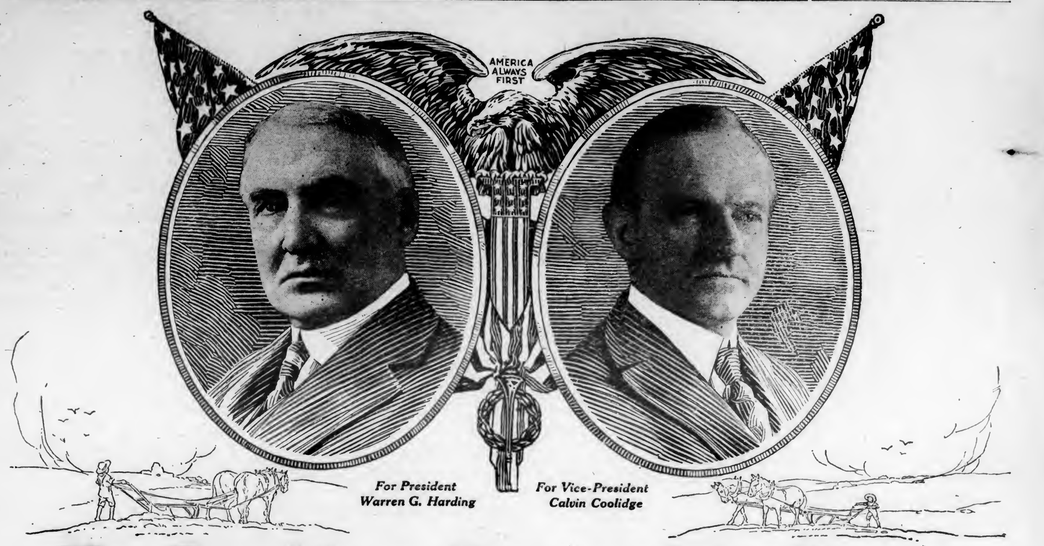

The Republican Party and the Farmer

To the Farmers of the Nation:

Next November you will join with all other good citizens in choosing a president of the United States for the four years beginning March 4, 1921.

You must choose either Warren G. Harding, the Republican nominee, or Gov. Cox, the Democratic nominee. There is no third choice. One or the other of these two men will be elected. The affairs of the nation during the next four years will be directed either by a Republican or by a Democratic administration.

Which will best serve your interests, both as a citizen and as a farmer?

Let us look at it for a moment from the purely farm standpoint.

Your experience of the past seven years, and especially during the past three years, tells you what you may fairly expect from a Democratic administration.

Your industry, the greatest in the nation, was singled out as the target for a price fixing policy which has limited the prices of the things you had to sell while leaving you exposed to the exactions of profiteers in practically every other line of production, distribution and speculation.

You have been told what you could receive for your staple products, either directly or indirectly; you have been subjected to restraints as to shipping, and all sorts of exactions and annoyances.

But there has been no limit placed upon what others might charge you for the things you have had to buy.

The result of this unwise, unsympathetic policy, while discouraging and harmful to the farm producer, has not helped the consumer. On the contrary, it has made conditions worse for him, because it has tended to curtail production and at the same time has stimulated speculation and profiteering.

The Republican party is not a class or sectional party; its policies are intended to upbuild the entire nation. But it believes that it is essential to the welfare of all our people that the farmer, whose industry is the very foundation of our national prosperity, should have his fair share of the wealth which his labor and enterprise creates. It believes that if our agriculture is to be maintained the farmer must have an absolutely square deal.

The Republican party therefore, by its platform and by the utterances of its candidates, is pledged to a thoroughly sympathetic, practical, helpful attitude toward American agriculture. It promises a well thought out, constructive program which will help make farming more profitable and therefore make our farms more productive.

In contrast with this helpful attitude of the Republicans the Democratic party offers no protection to the American farmer against the cheap farm products of foreign lands; on the contrary, it re-affirms its tariff-for-revenue-only policy which throws the American market wide open to the dairy products, grains and meats produced on the cheap land and by cheap labor of foreign countries. It promises no relief from the price-fixing and price drive policies which have cost the farmers hundreds of millions of dollars during the past two years and have helped no one but the speculator and the profiteer. Nor does it even recognize the existence of the violent fluctuations in the prices of farm products—more violent and unreasonable during the past three years than ever before in our history—which have caused you such heavy and unnecessary losses.

Pledges of the Republican Party

Here are the formal pledges of the Republican party as set forth in the agricultural plank of the national platform. Read them carefully, for they are of vital interest to you.

Practical and adequate farm representation in the appointment of governmental officials and commissions.

The right to form co-operative associations for marketing their products, and protection against discrimination.

The scientific study of agricultural prices and farm production costs at home and abroad, with a view to reducing the frequency of abnormal fluctuations, and the uncensored publication of such reports.

The authorization of associations for the extension of personal credit.

A national inquiry on the co-ordination of rail, water and motor transportation, with adequate facilities for receiving, handling and marketing food.

The encouragement of our export trade.

An end to unnecessary price fixing and ill-considered efforts arbitrarily to reduce prices of farm products, which invariably result to the disadvantage both of producer and consumer.

The encouragement of the production and importation of fertilizing material and for its extended use.

The extension of the federal farm loan act so as to help farmers to become farm owners and thus reduce the evils of farm tenantry, and also to furnish such long-time credit as farmers need to finance adequately their larger and long-time production operations.

Revision of the tariff as necessary for the preservation of a home market for American labor, agriculture and industries. (Note that the pledge to the farmer is just as specific as to labor and capital.)

Harding's Endorsement

Senator Warren G. Harding, the Republican nominee, in his speech of acceptance took advanced ground on behalf of agriculture. He said:

"I hold that farmers should not only be permitted but encouraged to join in co-operative associations to reap the just measure of reward merited by their arduous toil.

"Our platform is an earnest pledge of renewed concern for agriculture, and we pledge effective expression in law and practice. We will hail that co-operation which will make profitable and desirable the ownership and operation of small farms and which will facilitate the marketing of farm products without the lamentable waste which exists under present conditions.

"A Republican administration will be committed to a renewed regard for agriculture and seek the participation of farmers in curing the ills justly complained of and aim to place the American farm where it ought to be—highly ranked in American activities and fully sharing the highest good fortune of American life.

"Becoming associated with this subject are the policies of irrigation and reclamation so essential to agricultural expansion, and the continued development of the great and wonderful west."

Mr. Harding pledges federal co-operation with state governments in building and improving farms-to-market roads rather than national highways, to cheapen and facilitate the quick shipment of crops.

Send for a free copy of Senator Harding's address in which he discusses at length present day problems of the farmer.

REPUBLICAN NATIONAL COMMITTEE, Auditorium Hotel, Chicago.

Republican National Committee,
Auditorium Hotel, Chicago, Ill.

Please send me, free and postpaid, copy of Senator Harding's Address on the present day problems of the farmer.

Name.....

Address.....

Worth While Poultry Suggestions

F. V. L. TURNER.

To the average farmer capons mean more actually than appears on the surface. Given free range, after caponizing time, and allowed to grow until conditioning time, there is no other form of chicken that than can produce the same profit; corn is the principal diet for these meat producers, a cereal most available and cheapest as poultry food. A hundred young cockerels can be transformed into money makers in about three hours—the resultant profit is threefold the broiler profit.

Look up the capon matter—it will pay big.

Every enterprising egg collector sorts his collections before shipping—sorting constitutes the bulk of his profit. Brown eggs, of one size, go into one crate and all white eggs into another—there is a wide margin of difference between the prices on the two colors; obviously, when the price paid for mixed eggs (lower, always, than either white or brown) is figured against the price of brown or white, the producer can estimate his losses. Keep one breed or variety of fowl and all eggs will be the same color, therefore the price at which they are sold will be greater for the farmer.

Make up your mind to buy an incubator next spring—order it early, set it early and you will get early returns.

An incubator bears the same relation to a chicken raiser that a horse or tractor bears to plowing.

When grit for the poultry is purchased, only grit of known hardness should be employed; always the greater the quantity of grit found in the droppings the greater the evidence of its softness. Hard grit is slowly voided, therefore the gizzard is made to function more accurately, and every organ of the hen, in consequence, functions more thoroughly. Less unassimilated feed is thrown off and more eggs result from perfectly ground, and therefore assimilated feed. Naturally there is less feed required where all the feed is digested—nearly all farm fowls, except where hard grit is provided, are wasteful in this respect.

When pedigreed males are used the female offspring always produce more eggs.

"Use only pure-bred bulls" is identical with use only pedigreed male birds for eggs.

The venemous part of poultry diseases can best be combated with preventive agents; spray often with a combination insecticide and germicide. Disease is always harder to cure than to prevent.

Lime is a mighty good thing to sprinkle about the hen houses and yards.

When you buy a pedigreed male bird and prove his worth through his offsprings' productivity, breed him back to his offspring and fix egg yields in succeeding generations. In-breeding produced the heavy milker, and, so far as history goes, the egg producer; the hen that lays 200 eggs per year was produced in the same manner. In-breeding is the quickest sure way to heavier production and should be followed as closely as stamina indicates it is safe, usually three or four generations.

Now that we are approaching fall and winter poultry ailments, cull closely for the weak; throw them out that they may not contract and spread disease. Culling is said to be an art—it may be, but it is not difficult of achievement if we retain only the strong, sending all others to market.

Selecting and Maturing Pullets

(Concluded from page 266)

to normal, since such heavy feeding, if long continued, is likely to cause fatty degeneration of the egg organs and thus bring matters to an abrupt end.

Handling the fowls while on roost is one of the best ways to tell how your feeding is affecting them. Egg production of 50 per cent. is very good, and it should be the idea to maintain such an average throughout the season, rather than secure spectacular spurts of production at the expense of a future continuous egg yield.

Pennsylvania.

Weakened by Rust

Many a piece of farm machinery is broken in use, at a busy critical period, because the part has become weakened by rust. Nowadays when a machine breaks it is not only the cost of replacement to be considered, but the machine may be out of service for several days or weeks because the dealer's stock of parts is low, and completely out of some items. And it isn't the dealer's fault, either, in most cases. He has orders in for short stock parts, but ordering is one thing and getting orders filled is something else, as all machinery dealers and their customers know to their sorrow.

All farm machinery should be kept painted. Reduce breakage to the minimum. Parts will break often enough when machines are handled with the utmost care, but just now when replacements are so expensive and so difficult to get promptly regardless of price, the least the farmer can do is to guard against this unnecessary weakening of essential equipment, by allowing rust to set in on it. Fortunately paint isn't scarce. It takes very little time to apply it and the cost is nothing compared to the loss of several days use of an important machine at a critical period.

A Chance for a Marketing Job

Some of our readers may be interested in the fact that the U. S. Civil Service Commission is announcing open competitive examinations for two positions in the Bureau of Markets, Department of Agriculture, these being "Investigator in Marketing Fruits and Vegetables" (salary $1800 to $2760 per year), and "Assistant in Marketing Fruits and Vegetables" (salary $1200 to $1800 per year). Full information concerning requirements for both positions is contained in Circular No. 493, which may be obtained from the Civil Service Commission, Washington, D. C. Applicants should also ask for Form No. 2118, and state the title of the examination desired.

Timber from Dead Trees is Not Always Inferior

Prejudice exists in certain quarters against the use of timber cut from dead trees, and some purchase specifications insist that only timber cut from live trees will be acceptable. As a matter of fact when sound dead trees are sawed into lumber, and the weathered or charred outside is cut away, there is no method known, says the Forest Products Laboratory, Madison, Wis., by which the lumber can be distinguished from that cut from live trees, except that the lumber from dead trees may be partly seasoned when sawed.

All the information available at the laboratory indicates that timber cut from insect or fire killed trees is just as good for any structural purpose as that cut from live trees of similar quality, providing the wood has not been subsequently injured by decay or badly infested by wood boring insects; and in time the heartwood also will be similarly affected. The same thing is true of logs cut from live trees and not properly cared for. Until the wood becomes affected by these destructive agents, dead tree wood should be just as strong and just as durable as sound live tree wood.

In considering the subject it is useful to remember that the heartwood of a living tree is entirely dead, and in the sapwood only a comparatively few cells are living. Most of the wood cut from trees is dead, therefore, regardless of whether the tree itself is living or not. Such being the case, purchase specifications, instead of providing that material must not be from dead trees, should state that material showing evidence of decay or insect infestation exceeding a specified limit will not be accepted.

Plenty of Fertility Lessens Fly Danger

That farmers will profit by making the best use of their farm manure in growing wheat is pointed out by soil fertility officials at the Ohio Experiment Station.

An experiment covering 21 years of time, in which 8 tons of fresh manure and 320 pounds of acid phosphate has been applied to the corn crop, the corn being followed by wheat without any further treatment, has resulted in an average production of 66 bushels of corn per acre, followed by 28 bushels of wheat.

The best results are secured when the manure is hauled directly from the stables and spread upon the fields. Where 8 tons of common yard manure has been applied directly to wheat the yield has been 24 bushels per acre.

Good results are also secured in top-dressing the fields during the winter time, at the rate of 4 to 6 tons per acre, and if it is impossible to spread manure upon the land before plowing for wheat, the manure may be applied during the winter.

By using heavy applications of manure and acid phosphate it is possible to feed the wheat crop in such a way as to lessen the danger from the activities of the Hessian fly.

So few birds are harmful that when one has doubts, it is better to protect them all.

Pick Seed Corn in the Field

The best way to select seed corn is from the standing stalks. Why? Because we can choose ears from plants which have produced well in competition with neighboring plants. After the corn is cut we cannot tell how it grew. This is the reason why some of the best seed corn growers go through their fields as soon as the ears are ripe and hard and before heavy frosts or autumn rains injure the corn to pick out their seed for next year. Some men mark the selected stalks, but do not cut them until after the field is cut. Others husk the selected ears before cutting and hang them up at once in a place where they will dry quickly.

The characteristics to keep in mind in selecting corn in the field are: A sturdy, upright stalk of medium height and thickness, with short joints, and broad leaves carried well down, which stands in an average hill on average soil; an ear well matured and low set, of fair size, with straight rows and fairly well covered tip, with deep, uniform grains, having a medium sized cob, a rather small butt, and a husk protecting the tip; the ear hanging over so as to shed the rain. Although some strains of corn have been developed that tend to produce two ears to the stalk, one good ear is all we should expect where the stand is thick enough. It is much better to obtain one good ear than two nubbins.

Anyone who takes an interest and pride in his corn will find profit and satisfaction in field selection, especially if it is followed up for several years.

How about that high stool in the kitchen?

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FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Ancona, Orpingtons, Langshans, Brahmas, Leghorns, Andalusian, turkeys, ducks, geese, guineas. Prices low. **Ralph H. Raby, Loudonville, O.**

90 BREEDS Poultry, eggs, baby chicks, pigeons, dogs, parrots, ferrets, Belgian Hares, bargain list free; 60-page book 20 cents. **Hergey's Poultry Farm. Telford, Pa.**

CORN HARVESTER One man, one horse, one row. Self Gathering. Reset in Corn Binder. Sold direct to Farmers for 22 yrs. Only $20 with fodder binder. Free Catalog showing pictures of Harvester. PROGRESS CORN HARVESTER CO., Salina, Kans.

IF YOU WANT to sell or exchange your property write me. JOHN J. BLACK, 18th Street, Chippewa Falls, Wis.

What Roofing Shall I Use—and Why?

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1301, OCT. 15.—What is your favorite breed of swine and why? Do you prefer pure-breds or grades? Why? Please remember that this is an *experience* pool—not an examination in theoretical animal husbandry—and limit yourself to a statement of your own experience or that which has come under your personal observation.

TOPIC No. 1302, Nov. 1.—At least the boarder hen is getting what is coming to her. The great trouble is most farmers and farm women are unable to detect the non-producer despite the fact that she carries many unmistakable signs to the experienced culler. If you have had experience in culling out the boarder hen, pass it along, giving us your successes and failures.

W. H. B., Flora Dale, Pa.—The roofing of the many buildings needed on the farm is a most serious proposition. The first consideration, of course, is durability, and for all large and permanent buildings slate seems to be the best material. But it requires care and skill in laying, else snow will drift in. Under sheathing with building paper has not been very satisfactory. The upper courses and the sides and eaves should be nailed with No. 8 nails, if soft wood lathing is used, to prevent the wind from tearing them off. Lead washers should be used with all exposed nails. The greatest objection to slate and metallic roofs is that, unless sheathed, the attics are so hot in summer. Good heavy tin will last, in valleys, about as long as the ordinary shingle roof, but with slate or tile it is true economy to use copper, as the repair of valleys is difficult and expensive.

Good, smooth-sawed chestnut shingles—about the only shingles available here—will last from 20 to 25 years, but the price has advanced from $5 to $8 per thousand. These average 4 inches wide and are laid 7 inches to the weather, so a thousand will cover about one square. On account of the acid, it is best to use cut nails in all chestnut wood, as the steel nails corrode much sooner. Some redwood and cypress shingles are shipped in for special purposes, but even if they do "last forever," and a day longer," they are too expensive for ordinary use.

We have used tarred paper for chicken houses and sheds, but found that unless laid on matched boards, the wind, entering at windows and doors, soon shredded it.

We used metallic roofing on small buildings only. It can be used to advantage where sufficient pitch for shingles is not available. But moisture will condense in drops on the under side and form a little rust, then a little more moisture and a little more rust, and in time the roof is full of holes from below. When laid on building paper it lasted longer. We painted the under side with a metallic paint, but in time the paint checked. We could not keep the moisture from getting in at the eaves. But as we used the cheaper grades our experience may not be valuable. A shed covered with No. 1 material, where we could not use shingles, seems to give good service. Zinc used in valleys corroded out sooner than tin.

A. J. L., Albion, W. Va.—The roofing used in this part of the country for farm buildings, up to about fifteen years ago, was usually either shingles or else boards split from nice white oak. The shingles were usually split from chestnut timber and shaved by hand. This kind of shingle roof would last from twenty to twenty-five years. The oak board roof would last about half as long.

Then the galvanized sheet-iron roof was tried and this roof does fairly well, but it must be painted occasionally or else it will rust out.

I put prepared roofing on my house about eight years ago. This roofing got holes knocked in it, by hailstones, in a short time. It has got so bad now that it will have to be replaced by a new roof. At present prices of lumber and material I doubt whether the prepared roofing is an economy, though it does not cost so much as more lasting roofings, since the building must be sheathed solidly with boards before the roofing is put on.

Cut shingles and sawed shingles do not last nearly so well as the old shaved shingles. Another fault of the prepared roofing, and also of sheet-iron roofing, I notice that they are often damaged by winds. In looking over the school houses of our district last year, I noticed that the galvanized roofing which had been on seven or eight years was rusting pretty badly, and one house had the roof badly damaged by wind. A shingle roof on one school house had to be replaced last year. The roof had been put on more than twenty-five years ago. We have no metal roofs that are that old yet.

W. A. G., Vincennes, Ind.—As roofing for farm buildings in this portion of the country, beginning with uneven oak boards and shaved shingles made from large poplar trees, we have tried to keep pace with all such roofings as have been substituted in their place.

For a number of years metal roofing was very popular and quite good and durable, especially so when kept well painted. Since the great advance in steel, metal roofing, both the ordinary sheet-iron and the galvanized product, we have now resorted to paper or felt roofing. Considering the durability and reasonable cost of paper or felt roofings, we now use them in preference to anything else on the market. When coated about once in two years with a cheap mineral paint, or coal tar, such roofs last and give good service for a number of years. There is no expensive carpenter or metal roofer when such material is used. Anyone can put on roofing from the rolls of material.

The galvanized sheet metal is really the best roof for farm buildings when cheap, like it was before the war. When steel comes down to a normal price we will use it again. Wood shingles will never be used again. They are bound to be high in price, and the quality of the wood is poor. The best farm buildings here now are covered with the paper or fiber wool roofing and good satisfaction is given. That kind of roofing will always be cheap, and as the years pass the quality is going to improve.

C. C. C., Jr., Penn Laird, Va.—On our farm buildings, including dwelling house, we have no less than three roofing materials, including slate, galvanized steel and asphalt. Our theory has long been, "No building is better than its roof." A building for any purpose on the farm, it matters not what, should be erected for permanency. Since no building is better than its roof, there is no argument in favor of a poor, cheap roof for any purpose whatever. In building a new barn some years ago we hit upon a plan in laying our galvanized steel roofing that almost entirely eliminates heat deflection within the building, our only former objection to galvanized steel for farm buildings. We underlaid this roof with a heavy roofing paper with most gratifying results. Last spring, being unable to get heavy roofing paper, we replaced several old shingle roofs with asphalt, using the heavy grade and laying it on solid sheeting. Generally speaking, we are pleased with this roofing, but will never again run the sheets up and down roof. We did this on our first job, a hay barn measuring 24x60 feet, and the laps continue to leak every rainstorm with high wind, despite the fact we have given seams several applications of roofing cement. On the other buildings we ran the sheets lengthwise and experienced no trouble with leaks. Slate, due to its heat-holding qualities, is unsulted to farm buildings. My experience in roofing materials for farm buildings is that true economy lies in longevity of roof, providing, of course, all roofing materials considered afford perfect weather protection. I don't believe first cost of a roofing material should be a serious consideration. The idea is perfect protection for all time. It is unpleasant to feel that this, that or some other roof about the farm is going to the bad and must soon be replaced. Furthermore, a cheap roof requires replacing frequently and ere long the labor bill alone will purchase a roof that will last a lifetime. While a good grade of galvanized steel is my favorite for farm buildings, I believe heavy asphalt, guaranteed for, say, fifteen years, is well worth considering when labor cannot be well had for laying steel, and the fact that paper for heat-breaking purposes is outrageously high or cannot be had at all.

J. W. R., Carbondale, W. Va.—The subject of roofing appeals to me as one of the vital problems on the farm. There are millions of dollars lost each year to the farmer by using poor roofing materials and by putting the roofs on bad surfaces. I was 20 years finding this out and it cost me hundreds of dollars. I will not attempt to name the best roofing, because there are many kinds that will give satisfaction if they are put on properly, but there is the rub. I use 3-ply Rubberoid, but where I made the mistake was by putting it on rough board sheathing. When this is done you will do well to get one-half the service you would get if the sheathing were matched and planed. I have Rubberoid roofing put on planed and matched sheathing which has been there thirteen years and it is as good as gold yet. I have given those roofs a coating of coal tar once every two years. For the average farm buildings, such as barns, etc., I think that the 3-ply roofings made of rubber, etc., are the most economical that anyone can put on.

J. N. G., Vicksburg, Pa.—The question of roofing is a serious one for an owner of buildings, and what kind to use or buy is one which needs careful consideration. Our roofs had all been of white pine and chestnut shingles 24 inches long, which lasted 30 and 20 years in the order named. But it is impossible to get good white pine shingles any more, and chestnut shingles are not plentiful, nor are they desirable for a house roof, on account of discoloring the rain water. But we have had some roofing done with 18-inch shingles, which make a good roof, only one must re-lath the buildings. As they are sawed wide and are dried, they are easy to handle and are put on rapidly.

We have used the corrugated and flat iron or lap seam roofings, which are easily put on without changing lath. But they are warm to mow hay or grain under in the summer, and make a great noise in stormy weather. Then, too, they should be painted every few years to keep them from rusting, and they are liable to leak at any time and are not easy to repair.

Slate makes a good roof, but it is heavy, hard to repair and needs, or should have, a sheathed roof on which to be laid, with some kind of padding in addition.

The asbestos or cement shingle roofing makes a very attractive, and also a durable roof, which also should be sheathed to make a good job. Since they do not make such a hot room to live in or work under, and are fire-proof, it looks as though they would come into greater use, and on account of their durability also.

J. U., LaFargeville, N. Y.—I have used shingles when the roof was not too flat for them, and have always found them to make a good roof when a good grade of shingles was used and they were properly put on and well nailed. On nearly flat roofs I have used several kinds of felt, or ready roofing, and this has given good satisfaction, I suppose largely because I have been careful to get a good grade, and to apply it properly over a suitable surface, and then give it some care when needed.

The proper application and care are quite important; of course, we cannot make a good, durable roof out of poor material, but one can get poor results from good roofing if it is not well put on over a good, smooth surface. It is better to have the boards planed and matched, but rough lumber can be used if it is of even thickness and is straight so that there are no large cracks. The roofing should not be walked on more than necessary, and the cement and nails should be used as directed; it may be that more nails than are furnished will be needed. Most of this roofing needs a coat of paint every few years to keep it in good condition.

The most satisfactory roof for a house that I know of, is one of stamped steel shingles 10x14. This was put on something over 30 years ago and is still in good condition. It was galvanized, and while it has turned dark, it has not rusted.

The nearest I have come to a failure in roofing was to use poor shingles, or use them on a roof that was too flat for them, and the most frequent trouble in this section is to use a cheap roll roofing, not well put on, and then not give it any attention after it is on, and in a few years it blows away.

Stout women and large plaids, bright colors and shiny materials are not affinities.

A Roof That Resists Rust!

Defies the weather, "needs no paint," lasts a lifetime without repairs. When you build, or re-shingle use

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address

WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

OCTOBER 15.—Rugs and carpets. Give us the benefit of your experience in making and buying floor coverings; also practical suggestions for saving them in service and repairing them. Rugs and carpets are very expensive these days, so let's make this a really helpful exchange in economical hints.

NOVEMBER 1.—The play room and playthings for small children. What toys can be made at home? What games entertain your little ones most?

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

How I Try to Keep My Family Healthy

Mrs. C. S. F., Louisville, Ky.—First of all, as cleanliness is next to Godliness, and chief factor in the matter of health, I keep the home and surroundings as clean as time and strength will permit. I cannot find time to do some little things along this line that I would like to do, and even if I could find the time there is a near limit to my strength; but I do my best and angels can do no better. But I can have as much fresh air and sunshine as anyone else, and I make it a point to admit as much of both of these life-giving forces into the home as possible. Both are absolutely essential to the health of every human being, both are free for the acceptance and it only takes opening the windows, doors and shutters, raising shades and drawing back the curtains to accept these free gifts of God.

Besides keeping the home in as clean and sanitary condition as possible, I exercise my influence to lead each member of the family to keep their bodies clean and I insist on clothes being removed from the bodies before they are badly soiled. My little three-year-old daughter (the only little one in the family) gets exceedingly dirty sometimes, but as one writer says, "it's clean dirt," and readily washes off in the daily bath I give her. Next to cleanliness and hygiene comes food and drink. Pure, fresh water and good, wholesome foods well prepared, are wonderful aids to health. My family get plenty of wholesome vegetables, fruits, meats, etc., prepared in a simple, wholesome manner, and never do they suffer from indigestion brought on by an over-supply of rich pastry, puddings, etc.

One thing I've learned (by bitter experience), nor shall I soon forget, when a case of illness in the family is beyond my knowledge of what to do for it or relieve tho patient, it is time to call the doctor. There was a case of serious illness in the family some months ago which I firmly believe might have been prevented had the doctor been called two or three days earlier than he was. As it was, the life of the patient was despaired of for some time, and we have never ceased from that day to this to pay out money for medicine and doctor's bills as a result of the after effects of the disease. My motto is, "Call the doctor in time."

Mrs. C. J. L., Bridgeton, N. J.—Preaching and practicing fresh air and sunshine and proper food. The proper food requires some study and skill, for food acts as fuel for the body, it builds body tissue, repairs waste and assists in certain life processes. Experts have determined we need 3000 calories a day, and it takes brains, as well as brawn, to feed the human machine properly. We need one and a quarter pounds of vegetables and fruits a day. It does not pay in the long run to get what is easiest or cheapest.

Food can be divided into groups. First, vegetables and fruits; second, meat, eggs, cheese, milk and nuts; third, cereals and cereal products; fourth, sugar, jellies, jam and honey; fifth, butter and butter substitutes and fats of meat.

A properly balanced meal would probably contain 200 calories of No. 1, 200 of No. 2, 300 of No. 3, 100 of No. 4, and 200 of No. 5. If more calories were used for dinner. less could be used for breakfast or supper. Too many people let their appetites govern their eating, instead of using scientific sense.

The automobilist knows if the carburetor of his car is flooded with gasoline there is trouble; but the average human being seems to think he can flood his system with all kinds of stuff and at any old time and not have any trouble. The wisest plan is three meals a day for an active person, and yet look at the people who have no respect for their digestive apparatus and start it to working or overworking every time they see something attractive to the appetite.

Digestion begins in the mouth by the action of the saliva on starch. This action continues in the stomach; at the same time the action of the walls of the stomach grinds and mixes the food with the gastric juices. In the stomach the gastric juice acts on protein. In the intestins the pancreatic juice acts on protein, carbohydrates (starch and sugar) and fat. The fat is absorbed by the walls of the intestines. Proteins and carbohydrates are broken up into simpler compounds and enter the blood.

We do not appreciate the wonderful works of nature until we break nature's laws to the extent that we have to pay the penalty in suffering of some kind.

Mrs. H. B., Hepburnville, Pa.—My family consists of my husband, our two children, a boy of three and a girl of 18 months, and myself. Our children certainly are the picture of health and many people remark what rosy cheeks they have.

I have always tried to be careful what I gave the children to eat. I did not follow any particular set of rules, but gave them their bottle of cow's milk and other nourishment according to the physician's orders. Of course, the first year I gave them very little except milk, as we had plenty of it, and they seemed perfectly satisfied on it. After that I gradually increased their diet, until now I allow them both to eat almost any kind of cooked vegetables and many other easily digested foods. Of course, we still give them milk at meal times and also between. Eggs and puddings made with milk and eggs are also relished by children, and grown-ups as well.

Next in importance to the diet is the need of fresh air. We sleep with our windows open throughout the entire year, and have never found the night air to hurt us at all. The windows in the children's room are open wide all summer, and opened from the top, or if too cold the door is opened and fresh air allowed to come in from an adjoining room, in the winter. The children fairly live out of doors this summer. They have a sand pile in which they play for hours at a time. Of course, they get dirty in it, but water is cheap and the cost of soap is nothing compared to a bottle of medicine. It is very little of the latter that has been used in our house since we have been keeping house, although I know of a great many people who could not get along, or think they couldn't, without a cupboard full of patent medicines.

It seems to be much easier to keep healthy on the farm than in the city, so let us make use of our garden stuff and have more meatless meals, for the good of the entire family, and let us breathe more of God's pure air and have less doctor bills to pay.

Mrs. G. S. D., Denton, Md.—I am very careful what I cook and place before the family at all times, especially in hot weather. The breakfasts are well cooked rolled oats, with cream and milk and a little sugar, light, well baked biscuits, gems, muffins or yeast bread, either warm or cold, various cooked fruit sauces, berries in season, honey (we have bees). Not much butter is used, as we do not have ice and the butter quickly melts so it is not appetizing. A plain eggless molasses cake or simple cookies finish a safe, hearty meal, satisfactory to all. In cool weather, and especially in spring, we often have eggs, not over two to a person, scrambled or soft baked or boiled. For the noonday dinner we have vegetables, canned fish baked with milk, dressing or cream, fowl or soft fried eggs cooked in a very palatable fat, or macaroni and cheese, tomatoes in various styles, boiled vegetables with salt pork or beef, simple desserts, but very rarely fresh meats or anything likely to cause ptomaine poisoning. Of course, we have bread always. For supper our standby for the men is Boston brown bread steamed two hours, then put in fireless cooker until needed, milk, cake (the plain kind), fruit pies, especially apple, fruit sauces, any little left-overs from dinner. Of course, the menu will vary with the season, using whatever is in the garden or on the farm, but I am very careful to give fresh, wholesome food, and we do not eat too much, as we would be likely to if tempted by rich, spiced foods and meats. We often drink lemonade or grape juice (from our own grapes) and sometimes rhubarb juice, and I think them helps to health.

I try to emphasize the healthfulness of cleanliness, and to induce the family to take the proper remedy at the first symptom of sickness, but they are not "dosers," and sometimes will not take the "ounce of prevention," therefore are obliged to submit to the "pound of cure." We have not had a doctor in the house for more than three years. One member of the family had never had a visit from a doctor until past forty.

A. B., West Valley, N. Y.—Regular meals, served attractively, and peace and goodwill at the table are important things toward the health of the family. Never allow unpleasant subjects at the table, but store up in your mind some pleasant happening or joke without a sting.

Children grow and thrive bodily and mentally in sunshine. When they come to you with a request, let a smile instead of a frown meet their gaze. Throw aside shoes or other garments when too small. Do not ruin a child's peace with uncomfortable garments. A child's nervous system may be so easily ruined by unnecessary fault finding.

Plan to have a homey home. We can't all have things as we would like, but one can have some, if not all, of the refinements of life, if not the luxuries. Fresh air, sunshine and bathing, everyone knows, are necessary to good health. Use simple remedies, but do not always be dosing.

I have always allowed my children to lunch, if hungry, between meals, but instead of giving them pie, cake or cookies, they always preferred crackers and milk, cold rolled oats with milk, or something like that. If there are three or four little ones, as in my case, it takes more time and dirties saucers and spoons, but I think it more healthful than to send them to the cookie or fried cake jar.

F. R. C., Carbondale, W. Va.—My children are robust and healthy. I seldom have to consult a doctor about their physical welfare, and I believe that it is due, in great measure, to the way I manage them. I do not allow them to mince between meals. Haven't you noticed children running about with bread, cake or candies in their hands? They will mince constantly and at table they have no appetite, and haven't you noticed that those children are, as a rule, pale and thin, with a disagreeable disposition? My chaps are always ready with keen appetites at meal time. They get a square meal of wholesome, well cooked plain food, with plenty of fruit. They get but very little sweets in the form of candy. I am sure that the average child eats much more sweets than it should. They take a thorough bath once a week. They go to bed at 9 P. M. and get up at 6 A. M. Above all else I clothe them warmly in cold weather, as I believe that insufficient clothing is responsible for lung troubles and catarrh to a great extent.

B. B., Tully, N. Y.—This topic appeals to me more than any I have seen in a long time. I would like to see a big health crusade among the country people. Not only are the doctors raising their fees every few months, but they are retiring, dying and moving to the cities, until it is predicted that in twenty years the country doctor will be a man of the past. Then if a doctor knows the people who employ him understand hygiene and health rules he will get down to business twice as quick as he would if he thought the people were ignorant and he could prolong the case, and his fees as well.

Fresh air, plain food and quiet living have always done a great deal for us and we have had more sickness than any other family I know of. For four years I fought a chronic bone disease which wrecked all my plans for my future, and threatened to make a lifelong cripple of me. Even the doctors and surgeon did not look for me to get well, but I did. I learned many things that doctors never told me, though, and I now keep a medical scrap-book.

We sleep with our windows wide open all the year, unless it is too stormy. We try to get as much sleep as we can. In winter when we have a coal fire, so we can have hot water all the time, we try to drink a cup of warm water with a dash of milk in it, the first thing on arising and the last before retiring. It keeps the bowels open and prevents colds. We were exposed to influenza and lived in the midst of it, but did not have it, although none of us were very well, so our resistance was low. I am sorry for people who never have any sickness. They are so pitifully ignorant when it comes, as it always will some day. Death always levies its toll quickest in such families.

Mrs. C. F. G., West Valley, N. Y.—If you wish to have good health, be cheerful and do not worry. We owe this much not only to ourselves, but also to our family. It gives one a calm, contented feeling to live with such a person.

All our surroundings must be kept clean. Not only this, but our bodies, teeth, hair and clothing. Drink no tea or coffee, as they cause nervousness and a feeling of being "always tired." Be reasonable in your eating.

If your surroundings are not pleasant, make them so, and take pleasure in doing it. Love your work; whatever it is, do it cheerfully and willingly. "Shine" in your corner until your corner shines. I have known people who made themselves nervous and worn-out talking over the past. We cannot change the past, we cannot know the future, but the present is ours. Always be careful of your health. We change our clothing according to the weather, not according to the season.

Begin when your children are very young, to teach them not to eat or drink after anyone else, each one to have his or her drinking cup, towel, comb and toothbrush, each one their own little bed. We are never sorry for being too careful, but often very sorry for not being careful enough.

Mrs. M. B. Z., McCrea, Pa.—Sunlight and fresh air are the first and most important things to have in the home in order to keep healthy. Next, cheerful surroundings, as happiness and contentment go a long way toward making one healthy. Then the right kind of clothing, and there is more danger of wearing too much than too little in cold weather. I prefer light-weight clothing always for work about the house, and then when one must go out, put on more. And last, but not least, never take patent medicine. If you are sick consult your family doctor first, but with proper bathing and sunlight there will be few calls for the doctor.

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A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER II.—Continued.

"Oh, hello, Mrs. Jaffrey!" Mary's welcome was so joyous that Marise found response a little difficult. Her "Good afternoon, Mary," sounded chilly by comparison, and she hastened on to her business.

"May didn't show up?" Mary evidently saw it as sinister news. "Oh, me, oh, my!" she breathed.

"Do you think—" Mrs. Jaffrey hesitated.

"I think I ought to have gone home with her last night, instead of just putting her on the car," was the vigorous answer. "And after you've got work for her and everything—oh, she's certainly the limit, that girl. I'd let her go, if I was you."

Marise felt capable of deciding that point herself. "Do you know where she can be found?"

"Oh, I can find her, all right;" Mary spoke reluctantly. "Mrs. Jaffrey, I guess you don't know what you're up against. I've seen a lot of girls first and last, and, believe me—"

Marise interrupted. It was ridiculous how this nice, wholesome, cocksure girl could irritate her. "I am really anxious to find her. If it is not troubling you too much—"

"Oh, don't you worry about that. I like trouble—lap it up," the irrepressible good humor responded. "I'll get on her trail tonight, and let you know the worst as soon as I can. Of course, she might be sick. I hope to goodness it's that. Say, Mrs. Jaffrey—"

"Well?"

"A good, quick, fatal sickness wouldn't be the worst thing that could happen to May." When I thought it over, last night, I was real glad that she—well—you know what I mean."

"Yes." The little word closed that topic. "Then you will let me know?"

"I sure will!" The very hanging up of the receiver sent a wave of hearty kindness over the wire.

At six o'clock the next night Mary Healy came with her news. May had been waylaid by a certain Charley before she reached home, and the city had again swallowed her up.

"I got her away from this fellow once before, and now she won't even see me;" Mary was sorry and subdued. "Oh, Mrs. Jaffrey, wouldn't you think a girl with two eyes in her head would know better?"

Marise was looking fixedly at Mary's own fine eyes, gray and wide apart under a lovely forehead. When they were lifted to her earnestly, like this, they were disturbing. "She looks like Aunt Ellen," she told herself, to crowd out another thought. "It is a race resemblance, that's all—Irish blood." And she forced her gaze away; but it kept stealing back.

"You don't look at all like your mother," she said suddenly.

A surprising flush rose in the girl's face. Evidently her ease was not the impregnable thing it had seemed, and Marise liked her better for that moment of embarrassment. The averted, "No," was almost inaudible.

"You are not so tall," she added, with a smile.

Mary's head jerked up. "I like mama's bigness," she declared belligerently. "I think she's perfectly splendid."

"So do I," was the disarming answer. "She is like a super-woman, a little bigger than mortal. I thought her magnificent."

Mary flushed again, and smiled apology. "You see, the kids say things at her on the streets, and it does make me so hopping," she explained. "You know the sort of smarty things—'How's the weather up there?' and all that. Mama don't care; she laughs at me minding it so. I used to go and swat them for it when I was younger. And I'd like to do it now. Mama's such a perfect corker, Mrs. Jaffrey!"

"And she thinks rather well of you;" Marise spoke amusedly, and the girl laughed.

"I guess we're a mutual admiration society," she said, rising. "Well, here's May's address, if you want it; but she's like spilt water, that girl. There's nothing to pick her up by." She said good night and went as far as the door; there she hesitated. "Say, Mrs. Jaffrey!"

"Well?"

Mary tried to get something out, but it would not come. "Oh, well—I wish I could have been any use to you," she muttered, and left without further ceremony.

Marise dined with May Laguna's address staring up at her beside her plate. To look up the girl seemed hopeless as well as unspeakably distasteful. Her May! It was too impossible. After dinner she called up Hugh to tell him so. He was out, so she left a message for him to call her when he came in, then tried to settle down to a book; but last night's restlessness was on her again. All her self-control could do no more than keep her body still; her mind was out in the bleak world, seeking her child.

The eternal mystery of it! She pieced together for the millionth time the few bald facts that had been unearthed. A cab had taken Arnold, Mona and the baby to the Long Island ferry at East Thirty-fourth Street; thence some one, probably Arnold, had called up a quiet inn that they both knew at the other end of the island, and found it not yet open for the season. An acquaintance, taking the next boat, had passed the three in the station, presumably going the same way. Arnold had spent at least one of the next two nights at his duck club on the south shore. No other members had been there, but the stores and one of the beds had been used and the fire made more than once, and Arnold had boarded the ill-fated train from the flag station that was only a mile or two distant from the rough shelter. There was no evidence that any one had been at the club with him. In going there, he must have got down unnoticed in the crowd at some larger station and tramped across country. It had seemed so certain that Mona and the baby were established near by that priceless time had been lost making a quiet search of the island. The trail had grown faint when the public was called in to help.

Mona Molloy had been with the Jaffreys only a few days, but she had been for four years a friend's perfect treasure, and had left Mrs. Thayer only because some trouble with her heart had made the place too hard. She had been a quiet, reserved girl, kind and faithful, but not given to speech, mixing little with other servants, careful of her language and appearance, hostile to any attentions from such men as crossed her path—a really superior person; and the only hint of mystery was that no relatives had ever come forward to claim her. They had had no photograph of her to publish, but her name and description had gone all over Ireland as well as America. The Jaffrey servants had testified that she had been troubled and preoccupied, those few days, and one morning Hannah had found her crying, but Mona had explained that she was worried about her health.

Mrs. Jaffrey herself had scarcely been aware of the girl, except as a relief from care, for the trouble with Arnold had been rising to its stormy climax, and the days were full of scenes and wrath and tears. That Mona should have done what Arnold said was natural enough. Knowing him, Marise knew just the fine high tone he would have taken. No doubt he had said that it was the doctor's orders; that the child's mother was hysterical and must have a few days of perfect quiet. The doctor had been in only the day before, to deal with a raging headache—and Arnold could make anything sound plausible and high-minded to one who did not know him. Marise could hear his very words:

"Mrs. Jaffrey has every confidence in you, Mona, knowing what you have been to Mrs. Thayer all these years, and she must be spared the excitement of saying good-by. It is only for a few days, but in her state—" Oh, Arnold would have made it seem a noble performance to the end; he would have frightened that word "separation" out of her thoughts without once brandishing his threat. And there he had lain, dead—with the careful high-mindedness wiped out of his face, leaving it meaningless. Marise, kneeling beside him in the baggage room to which the body had been carried, had clutched his shoulders as though to force the secret from him; but the touch of death had shocked and stilled her and she had shrunk away. Never again for love or hate had he mattered to her. She had no room in her heart for anything but the frantic question: "Where is she? Where is my baby?"

"Mr. Le Baron, m'am," said Hannah disapprovingly from the doorway.

"It was as easy to run up as to call up," Hugh explained, coming in. "I was afraid something had happened."

Marise looked at him dazedly. She had been living so poignantly in the past that for the moment she could not place the present.

"Oh—oh, yes, Hugh!" she said.

"You were asleep," he declared, sitting on the arm of the nearest chair and holding his hat on his knee. It was his nice way of acknowledging that he had not actually been invited, and would go any instant.

His coming had lifted her out of the old horrors, into the quiet disciplined today, and in her relief she could have clung to him.

"Oh, I wanted your advice," she said, coolly friendly, as always. "It is this May Laguna that you worried me about. She didn't appear yesterday, and I find that she has gone her appointed way. She is hopeless, poor little rag. And if she were traced to my doorstep, she would not be my Mary. It is physically impossible. Do you still think I ought to investigate?"

"Oh, what I think—!" He rose to wander about the room, then laid down his hat and seated himself facing her. "I was advising you from your own point of view," he explained. "Personally, I think you ought to cut this search off short, investigate no one, run away from the name of Mary!"

"But why? I am only doing the natural thing!"

"No, this isn't natural. It's obsession." His anger rose a little, as it was apt to do at any difference of belief. "You are throwing away the years, one after the other, in a quest that is perfectly hopeless, however it ends. The nine hundred and ninety-nine chances are that it ends in nothing, and the thousandth chance—oh, you say you have faced every aspect of it, but you haven't, you can't. You are going on a very noble and beautiful theory, but, I tell you, it won't work."

"It would not work with you," said Marise sadly "You don't realize how different I am. You think I have all your shrinkings and resentments, and only pretend I haven't. That is not true. I have learned my big lesson. You can't and won't learn it, but until you at least acknowledge its bigness, Hugh, we're speaking different languages."

"Yes," was the dry answer. "I should describe them as truth and fiction, or as honesty and sentimentalism. Oh, the people! Listen to them on the cars, have business dealings with them—"

"Does it ever occur to you," she cut in, "that I am not thinking wholly of myself in this matter?"

"Neither am I," was the unexpected answer. "I see the girl's side of it, too—having to be made all over after she is grown up! You couldn't let her alone, you know—you'd have to make her over, speech, manners, taste, morals, jokes—lord, the jokes! Look how restive children get under it, and then multiply that resentment a thousand-fold—"

She put up her hands to stop the torrent. "Oh, Hugh, if you can't help me, I wish you would stay away!" she cried.

She did not realize how hard she had struck until she saw his rigid face. He took up his hat and went at once to the door.

"If you don't want candor, then I certainly can not be helpful," he said savagely. At the portieres he suddenly turned on her "This is not temper, it is righteous wrath!" he flung back, and then the front door banged on him.

Marise dropped her face into her hands. "Oh, Hughie!" she breathed, between tears and a broken laugh. She felt very sure that he would call up within twenty minutes.

Before that could happen, Hannah had admitted another visitor. Mary Healy came in downcast, almost shy, and though cordially welcomed, took an uneasy seat and found difficulty in beginning. A tremor shook Marise, and she averted her eyes from the fine young face. The girl had no right to look so much like Aunt Ellen!

"Did you find out something more about May?" she asked, more coldly than she knew.

"No, Mrs. Jaffrey. I just came back to—to tell you something." Mary was recovering her powers, but not her spirits. "I dare say you'll think I'm a goat," she went on heavily, "but it's awful hard for me to tell the truth about mama. She and I are just everything to each other—I couldn't have loved my own mother one bit better, and I don't see why people have to know I was adopted, anyway; but when I—"

The voice was only a roaring in Marise's ears, and a warning numbness passed up her wrists A line she had read somewhere—"If you are faint, tie your shoe!"—came to her aid, and she bent down as though to straighten the buckle of her slipper, her forehead almost touching her knee. After a few moments the faintness passed and the words began to reach her, but she could not at first put them together. Then a sentence leaped out at her:

"Being her own sister's child does not make it different, Mrs. Jaffrey! We're relations, anyhow." More followed, but Marise again lost the thread. Mary must have become aware of her unresponsiveness, for she rose.

"I felt I'd kind of told you a lie," she apologized. "But I guess you think I'm an awful goat."

Marise tried to say, "Don't go!" but Mary was going, and she was too weak and shaken to reach her. Mary was at the door when Mrs. Jaffrey lifted her white face, in which the blue eyes burned black.

"You say you were her sister's child," she repeated. "Had—had you always lived together?"

"No, m'am." Mary appeared surprised "That's what I was telling you—how my mother came on a visit with me, and died there in mama's house." She paused, but no more questions followed from the still figure. "Well, my friend is waiting for me down-stairs," she excused herself, and went out.

Ten minutes later Hannah came in. "Mr. Le Baron on the telephone, m'am," she said.

Marise stared at her and rose, but she went past the telephone, up to her own room, and closed the door.

"Mrs. Jaffrey has gone to her room and asks to be excused," Hannah told Hugh, doing her social best by the situation.

(To be continued)

Cockroaches and ants can be eliminated by dusting infested rooms, especially around the baseboards and sinks, with sodium fluoride.

Buying a Cream Separator

EARL ROGERS.

The purchase of a cream separator for the farm dairy does not involve so very much money—probably $125 will cover most any make or reasonable farm herd size. But there are other things connected with the use of it and its life that make the purchase as important as any farm implement we have to buy. Some experience with three separators, and the observation that I have had from working in scores of dairies as a milk tester, makes me feel that I might offer some suggestions to any one figuring on this farm implement.

Probably the first thing one should consider is the ease with which it may be cleaned after using. Many unnecessary parts make extra work and take time. One of the talking points of a few separator agents is that their makes don't have any discs to bother with. I have used both kinds and can see no difference in the time it takes to wash them. The 30 or so discs can be washed on a rack all at one time. The other kinds usually require a brush of some special sort.

The quality of tinware used in a separator is mighty important these days. Poor quality of tin will show rust quickly, and that means trouble sooner or later. In fact, a separator ought not to rust in a day. We had one that would rust in spots in a few hours. Not only do the spots that show rust make hard cleaning, but they get rough and make good cleaning very hard.

The capacity of a cream separator is a point often under consideration. It ought to be, too. Within reasonable limits, the larger sizes are the cheapest. One can use a separator of 250 pounds capacity an hour all right for a half dozen cows, but it is a long job to run the milk through. Twice the size, or something like 500 or 600 pounds an hour, will cut that time down more than half. Time on a farm during the summer months, with a field of ensilage corn to cultivate and harvest waiting, is valuable. The extra cost of the separator twice the size of a common one is not in proportion to the capacity at all. More than that, the bigger machine doesn't have to run so long, and will wear twice as long. That means that the amount you invest per year is half as much as with the smaller separator.

In buying a separator I see no reason for not comparing makes. Any machine that is right is usually sold this way. Two cream separators that look good can be set up together and run for a week or so. Then compare the turning, noise, closeness of skimming and handiness in washing. If an agent will not let you make this comparison with any other machine, then I would not care to bother with it.

Another thing I wouldn't do is to pay for a separator before giving it a good try-out. It isn't necessary. No matter whether you buy of a local agent or send direct to a factory, this will hold true. It may be necessary to deposit the price in your bank while the separator is being tried, but that makes the separator belong to the agent until you tell the bank to hand the money over.

A separator that has to be oiled every time it is used is quite a nuisance. I can't just see why this isn't a disadvantage, and one would be justified in looking for one that doesn't require this extra attention each time it is started.

The matter of close skimming is not so important as one is apt to think. I think we have a separator that will skim as close as possible, yet there are others skimming less closely that skim close enough. A tenth of a per cent. of fat left in the milk is mighty insignificant. It counts, but not much.

Ohio.

Good Temper in Farm Live Stock is Valuable

We cannot do as much work with a mean horse as we can with one that is easily managed.

It takes more time to milk an excitable, kicking cow than it does to milk one that is quiet and gentle.

It costs in time and money to keep a mean animal on the farm.

A mean temper, in most cases, is the result of improper handling. The habits farm animals have are generally the result of their training. The natively vicious animal is rare.

Patience and gentleness are the prime requisites to the proper training of farm animals. It will pay in time and trouble to give the young animal the right care. It is much easier to give a young horse the right kind of attention than it is to cure an old one of a bad habit. It never pays to lose your temper and beat the animal. He doesn't understand why he is being beaten and becomes nervous and afraid. If your domestic animals are afraid of you and hard to manage, it is generally your own fault. If they are gentle and tractable, they save you time, labor and worry.

Booming More and Better Live Stock

Chester county, Pennsylvania, is entitled to the banner this year for one of the greatest agricultural meetings and picnics ever held in the East. Five thousand farmers congregated at Lenape Park, near West Chester, Pa., on Monday, August 23rd, for the first big annual picnic and, during the afternoon, listened to a program of probably the greatest collection of agricultural speakers ever on one platform.

This big picnic was held in the interests of the opening of a big live stock campaign in eastern Pennsylvania, and the Chester County Live Stock Breeders' Association were joined by the Farm Bureau and Pomona Grange No. 3 in arranging for the picnic and meeting. In addition to the Chester county folks in attendance, several hundred from other counties and other states traveled to West Chester to be present and hear the nationally known speakers on the program.

Secretary of Agriculture E. T. Meredith was the principal speaker of the day, and Pennsylvania Secretary of Agriculture Frederick Rasmussen presided as chairman of the meeting. Other speakers were Robert Scoville, president of the American Guernsey Cattle Club, John A. McSparren, Master of the Pennsylvania State Grange, M. D. Munn, president of the National Dairy Council and president of the American Jersey Cattle Club, Hugh G. Van Pelt, James Watson, secretary of the Ayrshire Breeders' Association, and James Dodge, president of the American Berkshire Swine Association.

Millions to Farmers Through Better Cows

"If the average production of our cows in Pennsylvania could be improved to the extent of one thousand pounds of milk per cow, and this is not an unreasonable thing to hope for, it would mean an added income of $27,000,000 for the farmers and dairymen anually," says R. R. Welch, professor of dairy husbandry extension at the Pennsylvania State College, in his report for the year recently closed.

"The cow testing associations have been a big factor in building up milk production in this state," Professor Welch says. "It is the best method for eliminating the unprofitable cows—the 'star boarders'—and the scope of this work in Pennsylvania has now reached such proportions that we rank as the second state in the number of associations, with from fifteen to twenty more ready to start this summer. A class of cow testers is now being prepared at the college and they will soon be ready to go out to take charge of new organizations. It is interesting to note that in one cow testing association in two years the average production was increased by 656 pounds of milk and 36 pounds of butter per cow, and that the average income above feed cost was increased by $30.58 per cow. In one herd the average production of milk per cow was 952 pounds greater the second year than it was the first, brought about largely by weeding out sixteen unprofitable cows. The record of another herd in this association shows an increase of 2668 pounds of milk per cow the second year over that of the first year."

There are now 58 cow-testing associations in operation in Pennsylvania, with 1582 members and 28,373 cows. During the past year 1332 unprofitable cows have been discarded from herds with a corresponding reduction in the feed bill.

From Farmer Davis's Note Book

A long tongue has a wagon load of trouble behind it.

The man who never works doesn't really appreciate rest.

You can yell and jerk the flesh off your horses' ribs faster than lack of feed can take it off, for a horse worries over his master's temper more than we suspect.

Some men's appreciation of the beauties of bird, and fruit and flower, is bounded by their appetites—and never gets any higher.

To borrow a tool, and keep it long, is the same as stealing it.

When the skies are dull and gray, don't let your spirits get that way.

To keep cattle from bursting out wire staples by reaching through the fence, nail a strong board over the wires up the post, putting one nail above and one below each wire. It takes nails, but it stays.

Pure cider vinegar is valuable, but in its first stages can make a devil's harvest of sin among the drinkers. Lock it up. *Maryland.*

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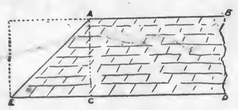
Estimating Amount of Paint

Our farmers do a good deal of their own painting of houses, barns and other outbuildings, and yet few know how to measure surfaces to be painted and estimate the amount of paint needed for a given job.

A few simple rules may be of service to our readers and possibly save some money on paint.

To find the square feet in flat or nearly flat roofs, multiply the length by the width.

If the roof is irregular in shape, as many are, the square feet are found by multiplying the length of the comb (A to B in accompanying diagram) by the distance between the eaves and the



comb (D to B). Then measure from A to C and multiply by the distance from E to C; then divide the result by 2. Add the results of the two calculations.

If there are gables in the roof multiply the length of the rafters by one-half the distance from the cornice to the peak; then multiply this result by the number of gables; that is, if the gables are all the same size. If different, each must be calculated separately.

To get the square feet in the exterior walls, multiply the length all around the house by the height of the wall. If there are any gables add the area of each and then add one-fifth of the entire result for trimmings.

For example: Measurements are wanted for a house which is 30 ft. wide by 50 ft. long by 20 ft. high to cornice. It has two gables 10 ft. high by 30 ft. wide.

ANSWER.

2 ends 30 ft. wide equal.....	60 ft.
2 sides 50 ft. long equal	100 ft.
Total length of all four sides..	160 ft.
Multiply this by height of wall..	20 ft.
This will give you	3200 sq. ft.
This is total number of square feet in four walls of house.	
Now figure the gables 10x30 ft.	
Divide height, 10 ft., by 2.....	5 ft.
Multiply this by the width.....	30 ft.
Paint surface of one gable.....	150 sq. ft.
For two gables multiply by....	2
And the result is	300 sq. ft.
Add the area of the walls.....	3200 sq. ft.
To the area of the gables.....	300 sq. ft.
And you get	3500 sq. ft.
Now add one-fifth for trimmings.	700 sq. ft.
And you get	4200 sq. ft.

Hence you will need enough paint to cover 4200 square feet of surface.

To estimate the quantity of paint required for any job, divide the number of square feet to be covered by the covering capacity of the paint. Of course, the spread of paint will vary somewhat according to the surface on which it is applied. A rough surface will absorb more than a smooth surface.

Under average conditions high grade house paint will cover 350 to 400 square feet two coats. Best grades of barn and roof paint will cover 200 to 300 square feet two coats. Shingle stain will cover 125 square feet two coats, brushed on; 2½ gallons will dip 1000 shingles. Dry or old shingles require more material than smooth, new ones.

Paint should not be looked upon as an expense. It prevents decay and replacements of decayed parts of buildings are more costly than "the ounce of prevention," paint.

Pasturing off Waste Places

W. A. GRAHAM.

Most all farms, large and small, have grass growing along fences, ditches and in nooks and corners of the lots and fields, that is largely wasted if not pastured off in some way. Years ago I learned a good and simple way of getting much benefit from the grass along roadsides and spots wherever more or less grass could not be grazed without herding any animal desired to eat it.

The plan is simple, cheap and very useful. A No. 9 wire is stretched between two stout stakes, driven well into the ground. I place on the wire a ring about 2 inches in diameter. The ring plays freely on the wire from one stake to the other. The halter strap, or rather a chain, 5 feet in length, or longer, having a swivel to prevent any kinking, is attached to the ring with a snap. A cow or horse can graze freely the whole length of the wire, and cannot reach any crops growing near it. Then further, if there is some grass land in fields where there is corn or some other crop, and no fence between, a wire 20 or 40 rods long can be stretched to stakes and a long chain on the halter fastened by a snap to the ring allows an animal to graze over quite an area of grass land. The wire and stakes can be moved as often as necessary. Any farm stock so grazed needs no attention, except to see that there is grass enough, and water as is needed. Try this simple plan.

Indiana.

Propagating Rhubarb Roots

Rhubarb which has not been giving very good results during the past season should be dug this fall, and the roots allowed to remain in the open during the winter. In the spring as soon as the ground can be prepared, the large root, or mother root, should be divided into from 6 to 8 parts and planted. A root 4 to 5 years old becomes root-bound and produces small stems.

Farm and Home Facts

There are ten known potato diseases in New Jersey, which is too many. Most of them can be controlled.

Distinctive and attractive containers for butter, beans, fruit, etc., need cost no more than the dull ones , but they sell the goods at a fancier price.

Hard work plus plenty of fertilizer in Maine produced 200 bushels of potatoes to the acre. Hard work plus experience plus little or no fertilizer in Michigan, Minnesota and Wisconsin, produced 100 bushels to the acre.

Keep hens that prove they're good enough
To buy feed and other stuff
And leave some corn for you.

Anyone who may have doubted the wisdom of paying good money for formaldehyde to control lettuce diseases last spring, might find it interesting to learn that sterilized salad topped the market in one New Jersey county not long ago.

When the kiddies ask for a drink, they get it, be it high noon or 3 A. M. But many a young calf has suffered from thirst all day in the sun of an unshaded pasture. The calves need it as much as the little children. The difference is, we don't know they are asking for it.

Eggless, Milkless and Butterless Cake

An eggless, milkless, butterless cake sounds like no cake at all, but read on. It is a real cake. Eggs are expensive just now, and a saving of one to three eggs is a real economy. Few housewives who are wise, spend much money on butter for cooking purposes, so this recipe does not save in shortening. Milk is sometimes difficult to get, and a cake made with water instead of milk saves from five to ten cents. The cake made from this recipe is very good if the directions are carefully followed. They come from the Home Economics Department of the Colorado Agricultural College.

Don't use your own method of combining ingredients; use the one given. The cake has a good flavor, is moist and keeps well.

One-half package of raisins, 1 cup sugar, ½ cup shortening, 1 cup boiling water, pinch of salt, 1 teaspoon soda, 1 teaspoon baking powder, 1 teaspoon cinnamon, 1 teaspoon cloves, 2 cups flour. Pour boiling water on raisins, sugar, and shortening and let stand till luke-warm. Then add other ingredients, sifted together and bake in moderate oven.

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The Practical Farmer

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Better Bulls and Boars—Bigger Bank Balances

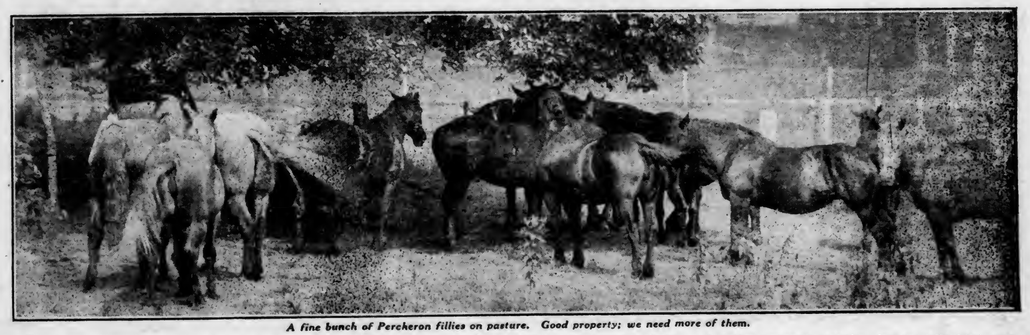
By THOMAS H. WITTKORN

CHESTER COUNTY, the home of Chester White swine and the abode of more dairy cows than any other county in Pennsylvania, has decided to scrap its scrub animals. America may still be the only country rich enough to use scrub sires, but Chester county has ambitions of becoming known, the country over, as a pure-bred live stock producing center. Its hope will not be in vain, either, if interest keeps up in the matter as it is at the present time. Rather than wait for governmental agencies to do all of the planning and most of the work, the farmers have organized and are working out a plan which will some day be copied in every community that wants improved live stock.

About a year ago a number of the leading farmers met and organized the Chester County Live Stock Breeders' Association. Morris T. Phillips, a noted breeder of Guernsey cattle, was chosen temporary president and he has given so much time and effort to the work that he was elected to that office at the first annual meeting. The ever active county agent, Daniel S. Adams, is the secretary, and has done much to foster the movement. In order to bring the matter vividly to the attention of all the 5,666 farmers, their wives, children, relatives and friends in the county, a big picnic was arranged for an August day. The Federal Secretary of Agriculture, E. T. Meredith, and several other noted national live stock men, mentioned in the last issue of The Practical Farmer, were there and to hear them was the biggest crowd of farmers ever assembled in the pleasure park selected for the event. Everybody present talked and thought live stock in a way not known before, even if the county does now produce between seven and eight million dollars worth of dairy products annually.

A permanent organization of the live stock association was effected at the picnic, and plans laid out for immediate action. The constitution adopted calls for a membership fee of one dollar, and dues of one dollar a year. An elastic advisory committee composed of two breeders for each class and breed of live stock represented in the county, is one of the strong features of the new organization. This not only allows more men who are really doing things a voice in the plans, but spreads the interest among those on the farms who feel that their chosen breed is being represented by someone who appreciates its possibilities and status in the county. In this way the leading breeds of cows, horses, swine and sheep are brought to the attention of everybody. Poultry is represented on the advisory committee, although, for the time being, it will not be subdivided. The advisory committee elects an executive committee from its members, and it, with the officers, will be the working force of the association.

The first step toward putting a pure-bred at the head of every herd in the county is to find out just what live stock is now on hand. Of course, the census figures would show totals, but more details are desired, so a careful farm to farm survey is now under way. In each of the fifty-six townships in the county a man has been selected who will be responsible for the data from that territory. These men will all serve without pay for the good of the cause, and see that the printed questionaire is properly filled in. This is the first attempt in Pennsylvania to get so much detail regarding the live stock kept in a county, and the compilations will be awaited with a great deal of interest. Aside from the name and address of the farmer, whether he is owner or tenant, the size of his farm and acres in leading crops, detailed questions regarding the breeding of all live stock kept on the farm will be asked. It will also be asked whether home raising or buying cows is practiced, in an effort to find out just what is the true situation. Every month there are many sales by dealers of "choice selected dairy cows" in the county, and it is hoped this question will shed some important light on this feature of the dairy business. In too many cases the cows offered have been "selected" by dairymen in other parts of the state as being good individuals to be rid of and are brought to Chester county, where there are more alfalfa fields and silos than in any other county of the state, in the hope of the dealer, possibly, that they may still make good. When they are left to "bag up" for two milkings and have a stout "monkey" at their side they make tempting bait for a dairyman who needs more milk, but the plan is a poor proposition for getting anywhere in constructive dairying.



A fine bunch of Percheron fillies on pasture. Good property; we need more of them.

A rather unusual question, but a really basic one, will be asked to find out the number of boys and girls between the ages of ten and twenty-one years now on the farms. The question of hired men is also an important one and information will be asked regarding them, especially the months of the year they are employed. Recent years have had marked influence on these two questions in Chester county, because of the immense industrial development in the shipyards and iron industry. It has been a case of farm competing with factory for a labor supply, with most of the advantages in favor of the factory. That is, industry could regulate prices to take care of labor costs, whereas farmers had prices regulated for them, and often little regard was given labor costs. It has been more and more a question of better equipment on the farms to reduce production costs, and improved live stock

(Concluded on page 291)

Where the Farmers are Pulling Together

JOHN DAY.

WHAT it takes to develop co-operation in right lusty measure, the farmers of Washington county, Maryland, have carefully nursed and nurtured until at the present writing about 75 per cent. of them belong to agricultural organizations which are federated with the Maryland State Association and the Farm Bureau Federation of America, which has a total active membership of 1,500,000 ambitious and energetic tillers of the soil. These co-operative organizations—15 strong, with 1500 members—are the official clearing houses of the different communities for the settlement of problems connected with local educational systems, country communication systems, public highways and general farming affairs. The associations individually and collectively thresh out local matters relating to legislative activities. Legislation pending before Congress is either protested or ratified in these local meetings and the approvals or disapprovals are presented to the proper Congressmen of the districts.

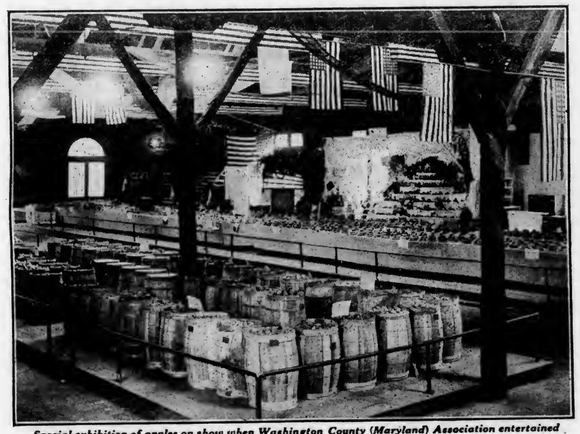
The Pecktonville Community Club—heretofore isolated from the rest of the county on account of one mile of impassable road—concentrated all its maiden efforts for the construction of a spur of permanent highway which would link the hamlet with the main state road. Finally the county commissioners agreed to give two dollars for every dollar which the villagers raised. Despite that the local mountaineers, for the most part, were limited in finances, they ultimately raised $3000, much of which was donated in the form of personal labor. The county furnished $6000, and the strip of road was soon completed. If the Pecktonville Community Club never lifts its hands again for the good of the village—a condition which, unquestionably, will not obtain—it, nevertheless, has already done enough to justify its retirement with emeritus honors.

The Hancock Community Club is one of the best in the state and now has 225 members. Previous to its inception, the apple growers had to pay prohibitive tolls in transporting their crops over the Potomac river bridge. As a unit the club members raised prolonged and strenuous protest against these super-charges, with the consequence that they were markedly decreased. The Hancock community was sadly in need of a high school, but previous to the organization of the club the local residents had never been able to get together on a common ground and demand the erection of such an educational facility. One of the first tasks of the club was to put over this proposition. Its co-ordinated efforts resulted in the speedy construction of a comfortable seven-room school house. Now the members are openly advocating a community high school for Hancock, and the odds incline favorably towards the success of such a project.

The Beaver Creek Community Club is probably one of the first of its character to cut the logs, saw the lumber and construct its own community house. In the Beaver Creek section labor is plentiful, while cash is scarce. That is why in open meeting the club directors suggested that the members cut, log, saw and build their home. The recommendation was immediately adopted and on certain afternoons each week the various members assembled and devoted their time to the felling of trees, the hewing of logs, the operation of the sawmill, the laying of the foundation and the building of the superstructure. Ere the summer is over, Beaver Creek will have one of the best built and coslest community centers in Maryland, and the same feeling of self-service and the ambition to work for the common good of the whole locality which have enabled the club members to raise a satisfactory home will also abet them in their ambition to promote and perfect one of the best organizations of its character in the Middle Atlantic States.

The Cavetown Community Club is unique in that its guiding genius is a local minister who has spared neither time nor trouble in projecting and developing this association. The club has been instrumental in improving the local school facilities, while it has also sponsored a campaign for better roads, which has achieved gratifying results. Annually the Cavetown Club uses a large tent, 80x40 feet, for the exhibition of various agricultural displays of fruits, farm produce, culinary art, needlecraft and home handiwork, which is always of great local interest. The club has successfully campaigned for an extension of the apple growing activities of its neighborhood, a branch of farming naturally adapted to the region.

The Chewsville Farmers and Fruit Growers Association is an organization designed primarily to improve the market, grade and quality of the apples which are marketed from the section under discussion. Heretofore there has been a lack of uniformity, grading and quality in the marketable fruit sold from the vicinity. Apples have been shipped 3000 miles from the Pacific Coast producing countries, and have completely outclassed the local offerings on the eastern markets. The quality of the eastern grown fruit has been superior, but because it was poorly graded, sorted and packed, it could not compete successfully with apples of far western origin. Finally the Maryland fruit growers have come to realize their shortcomings and organizations formed for the co-operative selection, packing and marketing of the apple crop are the result. Packing sheds have been constructed by the Chewsville Club and the recent apple crop was carefully prepared for market by experienced graders, with the consequence that the returns were higher than ever before.



Special exhibition of apples on show when Washington County (Maryland) Association entertained Farmers' National Congress of 2000 delegates at Hagerstown.

Several years ago Washington county supported 30 farmers' clubs and now these organizations have centralized and simmered down to 15 federated organizations which are in the game to stay, and which are composed of energetic, ambitious and progressive memberships which appreciate that the fundamental means of concentrating agricultural effort and enterprises and of upbuilding community projects obtain through unified co-operation. In addition to the clubs already enumerated, the Ringgold

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Points on "Unfilling" the Silo

C. A. UMOSELLE.

MANY silos were built in the Middle Atlantic States last summer, and the owners will be feeding silage to their farm animals for the first time this coming winter. Many men who have been using silage only for dairy cattle probably will feed it to other farm animals for the first time. It is important that they understand the composition of the feed and just how it can be used in the most efficient way.

Silage is a bulky feed, rich in carbohydrates, or fat-forming elements, but lacking in protein. In calculating the rations for your animals, always be sure to include feeds that are strong in protein, such as good clover or alfalfa hay, to balance the ration. If this fact is understood, silage may be used with profit in feeding almost all kinds of farm animals. It does not pay to feed silage to fattening hogs, because it is too bulky, but it does make a good feed for brood sows. If they are fed a good ration of silage and alfalfa hay, they will come through the winter in good condition.

Be very careful about feeding silage that is the least bit moldy, to any farm animal, and never feed it to horses under any circumstances. Moldy silage will kill horses. The amount of silage that should be fed to a milk cow will depend on the capacity of the cow; she should be fed just a little less than she will eat clean. If cows are fed a proper ration of hay and grain they probably will eat from 30 to 40 pounds of silage a day, and with some cows this amount will be exceeded. As silage is very laxative, its overfeeding will have a bad effect on the system of the cow, and this point should be watched carefully.

Silage should be fed in small amounts until the animals get used to it. Remember this about feeding more silage than the animals will eat up clean: When the silage is exposed to the air, chemical changes rapidly take place in it, especially if the weather is hot, and bad odors are given off. Watch this point carefully, and never feed more silage than the animals will eat up clean. Under average farm conditions milk may be produced from silage for about two-thirds the cost of the ration when silage is not used, when the rations are calculated properly in both cases. An acre of corn in the form of silage will produce more digestible matter than any other crop.

Silage usually is fed to milk cows in the morning and evening, and they are allowed to eat hay between the two feeds. The proper amount of grain to feed will depend on the cow; for dry cows it will not usually be necessary to feed any grain, if good alfalfa hay is fed. It will not be necessary to feed much grain to growing animals.

Silage has been used with great profit by many of the cattle feeders of the East, in the last few years. The growing of all of the feeds that possibly can be produced on the farm is important. One of the sins of the American farmer is the moving of their produce around too much. Many cattle feeders seem to think they must assemble alfalfa hay that has been produced in one place, corn that has been produced in another state, and cotton seed meal from the South to make the ration to fatten their steers. Now, that ration will fatten the steers all right, but after the stockman gets done paying for the feed, with several good freight charges, there may

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OCTOBER 1, 1920

FOR fear some of my Practical Farmer friends missed the words that occupied this position on the Editorial page of our last issue I want to repeat here that I have a helpful book I want to *lend* any Christian man or woman who is not finding complete happiness and victory in his or her Christian life. It is called "The Christian's Secret of a Happy Life;" it is Christ revealing and self-revealing, and so simply written that, in my opinion, no one can close it after a careful reading, without a clear idea of how the Life of Victory—which is the only really happy life—is to be accepted and lived.

That many are hungry for what this book offers is evidenced by the requests for it that have been received—in fact, at this writing my supply is exhausted; but I can get more, and the copies that are now out will soon be back, so I can provide a copy for anyone who will ask for it.

Have you a sense of incompleteness in your Christian experience? Is there a lack of something which you don't know how to satisfy? This book helped me; I believe it points the way for you. Won't you see for yourself? Write me about it, please.

EDWARD T. WALKER.

Apple Packing Regulations

EACH year a large loss is sustained by the fruit growers of Pennsylvania through failure to pack their apples in conformance with the rules and regulations enforced by State law. That these regulations, which secure uniformity in size, quality and package, are wisely made and must be rigidly carried out, requires no argument if Pennsylvania apples are to take their rightful place in the markets in comparison with western fruit, which, while perhaps more showy in appearance, lacks the flavor and quality of our own product.

This year when there is an enormous crop to harvest and labor and barrels are scarce and high, and transportation charges are heavier than ever before it is especially important to avoid all waste by carefully following the regulations which are really quite simple.

The gist of these requirements is that the fruit be carefully graded by size and quality, the sizes being reckoned in variations of one-quarter inch in diameter, thus, 2 inches, 2¼ inches, 2½ inches, etc. Then the end of each closed package (this means any barrel or box closed in such a way that it must be opened to examine the contents) must bear the following marks printed in plain block letters at least half an inch high: 1st, the name and address of the packer (the person who produces and packs). 2nd, the true name of the variety (if the variety is not known, mark it, "Variety unknown"). 3rd, the word "Minimum" or its abbreviation "Min.," followed by the figures showing the smallest size fruit. Or instead you may state how many apples are in the package. 4th, the capacity in terms of dry measure. Thus, "1 Standard Barrel,"—"1 Bushel," etc.

Not more than 5 per cent. of the total quantity of the fruit in the package is permitted to be smaller than the size stated. Furthermore, the apples on the top and bottom must fairly represent the average of the whole package. A variation of not more than 15 per cent. is permitted in the matter of size and freedom from defects, between the apples on the inside and those on the faces.

You can get from the Department of Agriculture at Harrisburg, in case you do not already have a copy, a bulletin giving the full rules and regulations, and also bulletins giving the measurements of barrels, baskets and crates of standard sizes.

What One Tree May Do

WHEN a single tree ten or twelve inches in diameter is blown down or destroyed by fire or in any other way is lost out of its place, the growth of a whole acre of live timber is wiped out. This makes it a serious matter when one fire burns over 3,000,000 acres, as was the case in the great Miramichi fire in the state of Maine. In the same state a heavy wind blew down a billion feet of soft timber in 1883. Out in Wisconsin a tornado leveled a tract of timber 50 miles square as if a big roller had passed over it.

These are figures which fairly stagger one, for they are as true as they are striking, and these are only a few cases of many that might be given to show the fearful loss that is all the time taking place in the timber of this country.

One of our farmers has made it a practice to set out at least one tree every year. Most years he did more than this, using for the most part sugar maples. Some of the trees thus planted are now a foot through, while most of them have reached a diameter of six to eight inches. And he always felt that it was time well spent.

If every farmer in the United States would set out just one tree a year it would mean the addition to our timber population more than 6,000,000 trees per annum. Keep this up, care for these trees and soon we would hear less of the dearth of lumber.

It is almost impossible to get some kinds of lumber at all now, and prices are becoming well nigh prohibitive in all lines. It seems to me it is the duty, as well as the privilege of us all to do everything we can to stem the tide of decreasing forest growth.

And it all Went up in Smoke

THE annual report on the tobacco industry of the United States for 1919, just issued by the Director of the Census, gives some startling figures. To begin with, it surprises the average citizen to be told that in 1919 there were 1,901,200 acres in tobacco in this country. Some little land, isn't it?

And what did it produce? Well, a lot of money—and some trouble, too, we're afraid. During 1919 there were produced in the registered factories and bonded manufacturing warehouses of the United States 7,629,000,000 cigars (that's nearly 700 cigars for every man, woman and child in our land—though, of course, we did share them with other nations), 427,000,000 pounds of chewing and smoking tobacco and snuff, and 55,000,000,000 cigarettes.

That last item hits hard, doesn't it? Fifty-five billion cigarettes! And of this number we exported only 16,211,769,000, leaving nearly thirty-nine billion factory-made cigarettes for consumption right here at home. Considering who the principal consumers of cigarettes are—boys, immature young men, and men (mature as well as immature) on whom the habit has almost, if not quite, as strong a hold as a drug habit—yes, and nowadays we have to add girls to the consumers' list—how much damage have they done? It is unreckonable—unthinkable! Isn't there *some* way that this item can be cut down, this evil checked?

The quantity of leaf tobacco exported during the year—765,913,164 pounds—greatly exceeded that of any previous year. The government collected a revenue of $205,000,000 on the entire 1919 tobacco business of the country.

Paying Germany in Wool

THE accumulation of wool in the world's markets amounts now to a full year's supply. A year ago there was only half a year's supply on hand. These large stocks do not include much of the finer grades, such as we would use in this country to manufacture our clothing under ordinary conditions. Most of it is of the coarser grades, such as Germany needs and which that country will buy somewhere as soon as the needed cash or credit can be acquired. Now there is in the United States Treasury a large sum of money—probably well up toward a billion dollars—due Germany from the sale of alien property during the war and remaining after all our expenses and claims have been paid. Why not pay part of this to them in wool? It is proposed to urge the passage of a bill as soon as Congress meets in December providing a credit with Germany and her former associated countries equal to this amount, which we must sometime pay. This would certainly relieve our wool situation.

WHATEVER the solution of the trying problem confronting The Dairymen's League may be, one result seems to be that it has brought about a kind of true co-operation among those New York State dairymen which might otherwise have been of slower growth. Confronted with the loss of a considerable part of their market owing to the decision of manufacturers of condensed, evaporated and powdered products to purchase no more milk after October 1st until market conditions change, these dairymen have decided to pool their proceeds. As one member puts it, "The way to co-operate is to co-operate." That's the spirit which overcomes all difficulties.

IT is expected that whatever quarantines are necessary on account of the Japanese beetle will apply only to the areas actually infested, and provisions made for movement under inspection and certification of all products restricted in such areas. There has been an impression in some quarters that the Government might place an embargo on large districts, or even whole states, but we are reliably informed there is no intention of doing this.

Bulletin Helps for Farmers

"A farm, to be successful, should maintain its productivity and return a reasonable wage for the labor of the farmer and his family, after paying farm expenses and deducting a fair rate of interest on the investment." That's a fair statement of fact, isn't it? Have you ever analyzed *your* farm business to see if it measures up to this standard of prosperity, and, if it falls short, to determine wherein and why? You don't know just how to go about it? Then here's a real help for you: Farmers' Bulletin No. 1139, "A Method of Analyzing the Farm Business" outlines a practical system and provides the blanks on which you may record your own year's transactions in putting it into use. Send for it.

Just at this time of year many mothers are awakening to a revival of interest in the question of wholesome and nutritive lunches for their children of school age. Such will welcome a booklet on "Hot Lunches for Rural Schools" (Circular No. 127), put out this summer by the Extension Service of the College of Agriculture of the University of Wisconsin (Madison). It is full of good ideas and good pictures.

The Garden in October

W. F. MASSEY

When the tops of the asparagus are evidently mature, mow them off and burn them, to prevent the seed from filling the beds with new seedlings. But do not cut off too early or you may start a new growth and damage the next crop.

Plants of lettuce for heading in the frames should now be set in the frames. But the sashes, while placed at hand, need not be used till the nights are frosty. But in any part of our territory we may expect frost at any time, though in this lower part of the Peninsula (Maryland) we seldom have it before the twentieth, and last year had none until November 10th. But this was an exception. Frost will often appear on the grass when the atmosphere a few feet above is over 35 and no harm will be done. A killing frost comes with the air at 32 degrees or lower.

As soon as the sweet potato vines are nipped by frost, cut them off, even if you do not intend to dig them at once. Of course, in large field culture this usually is done by horse power cutter at digging. But in the garden it is well to let the sun to the hills a while before digging.

In fact, both late Irish potatoes and sweet potatoes are best out of the ground after the tops are killed, though they need very different treatment. Get the Irish potatoes into total darkness and a cellar where there is no heat, and keep in winter as near as practicable in a temperature of only a few degrees above the freezing point.

Sweet potatoes need to be dug when soil is dry and the sun bright. Let them lie along the rows in the sun during the day, but never bruise them by throwing into heaps. Then if you have a cellar where you can start a high temperature, even by using gasoline stoves, you can dry them off from the sweat they always pass through after storing, and they will keep then with comparative ease. After being well dried I find the best way is to wrap each potato in old newspaper, line a box thickly with similar papers and then pack the potatoes in the box and cover the whole thickly with papers. I have kept them in this way in my cellar until August the next summer. But never pack any cut or bruised potatoes. Use these at once.

When the tops of the dahlias and cannas are cut down by frost, cut the tops off a few inches above ground. Both cannas and dahlias can be kept in a frostless cellar if covered with soil to prevent drying up. Here, I bury the dahlias outdoors and have kept the cannas in the same way, but I prefer to take the cannas up with all the soil that adheres to the roots and pack them in a corner of the cellar in a heap. For the dahlias I dig a shallow pit in a dry spot, line it with old papers and pack the roots in closely and cover them thickly with old papers; then the soil is mounded thickly over all, and they usually keep very well. In fact, in our average winters they will live where they grew if well covered with coarse manure. In the latitude of Philadelphia they can be kept in this way if the whole heap is covered with coarse manure, but it will be safer there to store in cellar and cover with soil to prevent drying up.

Late in the month the celery grown in single rows should be lifted and stored in narrow trenches about the depth the plants are tall. The trenches can be covered with boards nailed roof fashion and the roof later covered with earth. Where celery is grown in the Baltimore beds the earthing should be carrried on rapidly, keeping the growing center just above the soil. It will seldom be necessary to cover entirely until November, when we will give full directions.

Late cabbages that are growing rapidly and seem little inclined to head, can be made to head better by pulling until you hear the roots crack. Storing for winter demands heads just mature but not too early headed. Here we want cabbages to be just well headed in late November.

When frost threatens to be sharp, gather all the well grown green tomatoes. Wrap each in paper and pack in box and put in dry cellar. Then you can bring out a few at a time and ripen in the sunny kitchen window. I have kept them for slicing till January.

Clean up all weeds and grass and put them in a compost pile to rot and go back on the garden. Then cover the garden all over thickly with stable manure, mulching the rows of spinach well. Turnips need cold keeping like Irish potatoes, and can be kept with simply a thick cover of earth over a heap. Turnips not worth pulling in the fall can be kept for spring greens by covering the bed with green pine boughs.

The strawberry plants can be set now, but the best time for setting in lower Maryland is in November. These will give a partial crop in the spring.

Digging Medicinal Roots

H. F. GRINSTEAD.

There are certain wild roots that have medicinal value, and the digging of them may be made remunerative in spare time. Among the highest price are the golden seal, senaca snake root and ginseng. There are many more common weeds, however, that are valuable, among them being dock, calamus, dandelion and poke root. Before going into the business of digging roots, it will be well to write some commission firm for quotations on each kind, with directions as to the best method of shipping.

All such roots should be dug late in the fall after the top of the plant has died, though they contain strength till spring. Dig while the ground is dry, if possible, and wash off all dirt adhering. Do not scrape the root, and dry as soon as it has been washed. Large roots, like poke and dock, are sometimes split transversely into two or more pieces. They should never be dried in the sun, but on shelves in a well ventilated room or barn loft. Artificial heat can be used very successfully in drying roots, the same method being followed as when evaporating fruit. If placed on shelves in a room where the heat of a stove keeps the temperature up to 100 degrees, the roots will dry, provided there is a free circulation of air. Roots must necessarily be dried till they are brittle, and apparently contain no moisture whatever. If they snap when bent between the thumb and finger they are ready to store or pack for shipment. They should be stored where the air is dry, so they will not mold or mildew. A very good method is to put in flour sacks and hang up in a dry room. Dried roots may be shipped by parcel post or express.

Prices of medicinal roots have advanced so rapidly within the last few years that the only way to keep in touch with the markets is to write to dealers for prices. Usually those commission firms which handle furs or old rags and rubber will also buy medicinal roots. The Department of Agriculture at Washington, D. C., have in the past been able to give valuable information about the marketing of roots and weeds that are used in medicine.

Missouri.

Advises Orchard Planting this Year

"The fruit grower with an eye to the future will plant more trees this fall and next spring," says Dr. S. W. Fletcher, head of the department of horticulture in the agricultural school at the Pennsylvania State College. He has recently returned from assisting with a survey of the apple industry in Pennsylvania conducted by the State Department of Agriculture, and is well acquainted with the existing fruit situation in general.

"The high cost of young stock is naturally tending to discourage the planting of more orchards. But by looking ahead ten or twelve years when trees planted this year will come into bearing, it is certain that there will be a falling off in production unless plantings are made now. If one is thinking of planting an orchard next year, now is the time to order trees. Nursery stock is scarce and high, because of the lessened importation from Europe, and labor conditions. Nurserymen pay from five to ten cents each for French seedling apple roots that formerly cost a cent apiece. One year old apple trees that cost from ten to twenty cents five years ago will cost from 40 cents to $1.25 this year.

"It is doubtful if there are enough nursery trees in the country to supply the demand; hence it is desirable to order this fall instead of waiting until spring. Apples and pears can be planted in October and early November as well as in the spring. Peaches, plums and cherries should not be planted in the fall. Even if no plantings are to be made this fall, the trees should be bought now and 'heeled in.' This is temporary planting close together in a furrow with tops pointing toward the north and roots covered with soil and mulched with straw over the winter."

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—land equal to that which through many years has yielded from 20 to 45 bushels of wheat to the acre—grazing land convenient to good grain farms at proportionately low prices. These lands have every rural convenience; good schools, churches, roads, telephones, etc., close to live towns and good markets.

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For illustrated literature with maps and particulars regarding reduced railway rates, location of land, etc., apply to Department of Immigration, Ottawa, Canada, or

F. A. Harrison, 200 North Second St., Harrisburg, Pa.
Canadian Government Agent.

WESTERN CANADA Farm Lands at Low Prices The Wheat Belt of America

Make Bees Snug for the Winter

It is none too early for the bee men of this section to begin to think of caring for their colonies for the winter. In fact, according to the State College bee men at Ithaca, N. Y., the last of September or the first half of October is the proper time to begin insulating the bees if use is to be made of the packing case method of wintering.

For the packing case method, the College of Agriculture apiarist advocates the use of cases holding four colonies. Each case should provide 4 inches of insulation on the bottom, 8 inches on the sides and 1 foot on the top of the hives. This insulation should be given the latter part of September or the first half of October. Full details on making the packing cases and about outdoor wintering are found in Farmers' Bulletin No. 1012, issued by the United States Department of Agriculture at Washington.

Cellar wintering is strongly urged for middle and northern New York. The bees should be put in the cellar before they have lost part of their vitality by hard freezing, which means not later than the first half of November.

The cellar should always be below the frost line and the temperature never below 40 degrees F. even in the coldest weather. Ideal temperatures are between 45 and 50 degrees F. Sudden changes in temperature are to be avoided. The cellar must be dark; little ventilation is needed.

The summer entrances to the hives may usually be left open, and in no case should the bees be confined to the hives by screen, as is sometimes done. After putting the bees in the cellar they should be left absolutely without disturbance until spring. From the first to the middle of April is usually a good time to take bees out of the cellar. A full discussion of the cellar wintering of bees is found in Farmers' Bulletin No. 1014 of the United States Department of Agriculture. Bee bulletins obtainable from the New York State College at Ithaca, N. Y., are Extension Bulletin 16, "How to Increase the Honey Supply," and F. 138, "Beginnings in Beekeeping."

Dry Surplus Corn

Dried corn is as old as the early American Indians. It may date back to Adam for all we know. Sweet corn is one of the easiest of the vegetables to dry for winter use. If there is enough on the market, the corn can be bought very cheaply, or if you have a surplus in your garden, it will be well worth your while to dry that surplus. As soon as the corn is pulled, husk the ears and boil for 5 minutes to set the milk. Cut the corn off the cob, and place on the dryer in the sun and air for a day, or until the corn has been dried. Place trays in the oven and finish drying. Store in a dry, cool place until it is desired during the winter.

Whitewash the Stables Now

It is a good time now, before the herd goes into winter quarters, to give the interior of the cow stables a coat of whitewash. Whitewash makes the stable light, it gives it a clean appearance, and above all it cleanses the walls and ceiling, which so often become grimy and dusty, and makes it more difficult to produce clean-milk.

Here is a good formula for a whitewash that will stick well, recommended by the dairy department of the New Jersey State Agricultural College: Slake half a bushel of unslaked lime with boiling water. Cover during the process to keep in the steam. Strain the liquid through a fine sieve and add a peck of salt previously dissolved in warm water. Then add 3 pounds of ground rice boiled to a thin paste and stirred in while hot. Next add 1 pound of clear glue dissolved in cold water hung over a fire. A half pound of whiting will give it a lustre. To the above mixture add 5 gallons of hot water and leave standing for a few days, covered to keep out dirt. Applied hot, a pint of this will cover a square yard.

Query Answered

Treating a Barren Quince Tree.—Why is it that a good sized quince tree does not bear, standing by itself, no others near? The tree has been pruned and cultivated.

Trees can be made to bear annual crops and their bearing propensities increased. In some cases more strenuous efforts will be required than in others. Notwithstanding these well-known and established facts, there are constantly arising exceptions in nature, where individuals of the vegetable kingdom, as in the animal, and also in the human family, do not respond to the application of human efforts, along both scientific and practical lines.

The quince tree in question may possibly be one of the exceptions. However, if this were my tree I would treat it as follows:

First, dehorn it; that is, cut one-third of the top out of it, and in doing this I would leave the tree in the form of an inverted umbrella. Follow this by taking out all surplus branches, leaving the tree so thoroughly thinned that both air and sunlight can circulate freely throughout the entire tree. If the branches remaining on the tree are long and straggly, cut them back severely. If large cuts have been made, paint the exposed surface with white lead. Next take a sharp knife and make a clean cut from the branches down the trunk of the tree to the surface. Now clear away the surface soil about the base of the tree to a depth of 3 or 4 inches and a diameter of 3 feet. Next follow out several of the main roots to a distance of 4 or 5 feet from the trunk; here cut the root off, making a nice clean cut with a sharp ax. Now spray the tree, if dormant, with miscible oil. I prefer Pratt's Scalecide. This should be diluted, 1 quart of oil to 16 quarts of water. Apply in sufficient quantity so that it will run down the trunk and thoroughly saturate the exposed roots. Next replace with new soil that which was removed from the roots. A week later a weak solution of salt brine should be sprinkled about the tree, as far out as the branches extend. When buds appear in the spring and before they open, apply 6 pounds of the following fertilizer: 2 lbs. of nitrate of soda, 4 lbs. of S. C. rock, 16 per cent. Repeat this dose of fertilizer four weeks after the blossoms have fallen. All this must be followed up with the regular pink bud, blossom and summer sprayings. With good culture the tree will become a regular bearer of high-class fruit.

If, however, this particular quince tree should be the exception already referred to, the last and only thing which can be done is to insert a few scions by grafting, or buds by budding, into the top of the tree, such scions or buds to be taken from some prolific bearing tree found in the immediate neighborhood. These scions or buds should be taken from a different variety, so as to derive all the benefits of cross pollenization.

A. N. B.

Homespun Yarn from Ithaca

Don't forget that the first point in table manners is to be on time at meals.

Every housewife needs reference books for her work. Cornell has them. Send to Ithaca for a list of publications, any of which will be sent free.

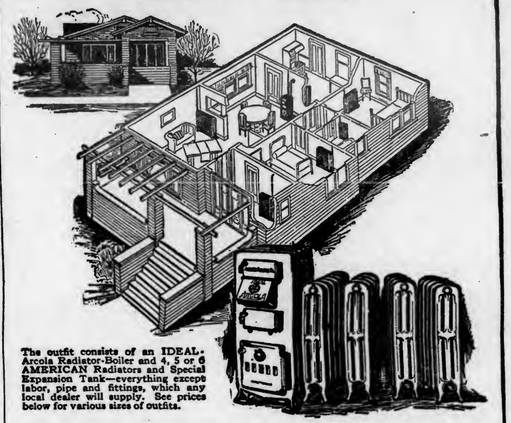
There are two methods of preparing food, accurate measuring and mixing, and the look-and-feel method. The former is the safety-first rule; the latter is only for the experienced hand.

A new method of canning vegetables uses 1 teaspoon of salt and 1 tablespoon of vinegar for each pint jar; then boil as with cold-pack method for one and one-half hours.

High cost of raiment
Cannot scare 'em—
Folks who are willing
To patch 'em and wear 'em.

IDEAL-Arcola Radiator Boiler Farm Home Heating Outfit

(no cellar needed)



The outfit consists of an IDEAL-Arcola Radiator-Boiler and 4, 5 or 6 AMERICAN Radiators and Special Expansion Tank—everything except labor, pipe and fittings, which any local dealer will supply. See prices below for various sizes of outfits.

When the cost of your heating is figured on a yearly basis, the IDEAL-Arcola heating will be found to be the *cheapest heat* in the world, for it lasts forever—heats every room—uses no more coal than a stove, never needs repairs, is clean and easy to run. It gives you the same delightful warmth that city residences have.

Any dealer will furnish in sizes to suit rooms and climatic conditions.

For Soft Coal	No. 1-B	Size IDEAL-Arcola with 100 sq. ft. of Radiation	$142
	" 2-B	" " 150 " "	176
	" 3-B	" " 200 " "	213
	" 4-B	" " 250 " "	251
	" 5-B	" " 300 " "	290
For Hard Coal	No. 1-A	Size IDEAL-Arcola with 135 sq. ft. of Radiation	$163
	" 2-A	" " 200 " "	206
	" 3-A	" " 265 " "	251
	" 4-A	" " 330 " "	299
	" 5-A	" " 400 " "	349

Prices include Expansion Tank and Drain Valve. Prices do not include labor, pipe and fittings used in installation and which are supplied by the local dealer at extra charge. Radiation is of regular 38-in. height 3-column AMERICAN Peerless, in sizes as needed to suit your rooms. Outfits shipped complete f. o. b. our nearest warehouse, at Boston, Providence, Worcester, Springfield (Mass.), Albany, New York, Philadelphia, Harrisburg, Pittsburgh, Baltimore, Washington, Richmond, Buffalo, Cincinnati, Indianapolis, Birmingham, Detroit, Chicago, Milwaukee, Minneapolis, St. Paul, Des Moines, or St. Louis.

Shipped complete for immediate installation

The beauty of the IDEAL-Arcola method is that no cellar is needed. Everything is on one floor. The Arcola is placed in any room that has a chimney connection. No running to cellar. Same water is used over and over again for years. No fire risk.

Buy now at present attractive prices for outfits complete!

IDEAL-Arcola outfits consist of the boiler and radiators to heat various size houses. Write us your requirements! Unlike stoves, there are no coal-gas leaks in the living-rooms. The IDEAL-Arcola delivers the soft, radiant warmth of hot water—not the dry burnt-out atmosphere of stove heating. There is no fire risk to building—no danger to children—fire lasts for hours! The Arcola burns hard or soft coal.

Catalog showing open views of houses, with the IDEAL-Arcola Boiler in position will be mailed (free). Write today

Sold by all dealers. No exclusive agents.

AMERICAN RADIATOR COMPANY Write to Department P-45 Chicago

Modern Orcharding

(Concluded from Sept. 15th issue)

CULTIVATION.—Cultivation should begin at once and the orchard should be kept scrupulously clean. For the first two seasons inter crops, such as corn, tomatoes, potatoes, beets, peas, beans and cabbage can be grown in the spaces between the tree rows. All cropping should then cease and legume cover crops grown to be used as a mulch, for seed, or to be plowed under. The legume cover crops can be cut and removed for hay, as two-thirds of all their manurial value lies in the stubble and root.

Clean culture has proved the best method for treatment, and this can be practiced, with few exceptions. There are, of course, orchard sections where it is too hilly or rocky to cultivate, and in such cases the sod mulch system must be practiced.

Orchards should be plowed as early in the spring as possible, and the orchard should be cultivated once a week until July 1st to 10th, when cultivation should cease and the cover crop sowed. As nature's treatment of fruit trees provides that wood growth and bud development should be made the first half of the year, and the last half the wood and buds are to ripen, or mature, in order to stand the rigors of winter and be strong and hardy for the subsequent crop, we follow nature's plan.

We have secured best results by plowing in the early spring, then disking the land once or twice, after which we use the Acme smoothing harrows. By cultivating weekly we can easily keep down the weeds and conserve the necessary moisture.

FERTILIZING.—Commercial fertilizers and legume crops are absolutely essential to perfect orchard development. The third year after the orchard has been planted the program of plant food must begin and be religiously followed during the life of the orchard. The application of commercial fertilizers the third year should be 2 pounds per tree, made up of a mixture of 1 pound nitrate of soda and 2 pounds of treated rock. By the fifth year of the orchard the quantity should be increased to 3 pounds, and by the eighth to the tenth year 4 to 5 pounds per tree should be applied. Such feeding, in addition to the legumes, which also add nitrogen and humus, will keep any orchard in a good annual producing condition.

PRUNING.—Pruning is mighty important, and the principle involved here is to keep a tree from overbearing—to keep it from surplus wood and give it the proper form by which air and sunlight can freely reach every part of the tree. What is necessary is to have strong terminals and healthy, vigorous buds. These cannot be had where there is a surplus growth or an overabundance of buds. Neither can best results be obtained unless the sun, during the growing season, can reach every leaf on the tree. This of itself furnishes the orchardist the best guide to proper pruning.

SPRAYING.—A volume could be written on spraying—volumes have been written, but the spraying problem for the orchardist will be ever new. Each year finds us with some new destructive agent, either insect or disease, which requires new forms of treatment. Spraying is the most modern of all orchard operations, and the most costly and particular.

We now have many orchard insects and diseases of great economic importance. These we are controlling. As the newer pests appear, though threatening, we will, through the efforts of the practical orchardist and the scientific research departments of the agricultural colleges, find the means for combating them. Guides to proper and timely spraying are available to all who desire them. So far every orchard insect and disease is under control. Some bacterial difficulties, as peach yellows and little peach, are only partially controlled.

The health and vigor of the tree has much to do with resisting the destructive effects of the orchard pests, but this cannot be relied on wholly. Trees must be sprayed as a precautionary measure. Properly sprayed trees have smooth, clean bark and vigorous, healthy foliage, thus stimulating the tree. Orchardists should spray for the same reason that they insure their buildings. There is still a far weightier reason why we should spray. Sprayed trees are healthy trees, and healthy trees produce healthy fruit and lots of it. The commercial value of an orchard depends entirely upon the amount of perfect fruit the orchard produces. Perfect fruit cannot be had without thorough and timely spraying. To accomplish proper results by spraying, a knowledge of the life history of the insect or the disease to be controlled, must be had, as well as a knowledge of the chemicals used to combat them.

Summing up the modern orchardist, he must, first, love fruit growing. He must then know soils, how trees and plants feed and grow, how to put orchard fertility into the soil, and how to maintain it, how to plant a tree, how to prune it, how to spray it, how to cultivate it, and lastly, how to pick, pack and sell the product of his trees. Therefore, to the ordinary man this would seem a mighty complex problem. However, as previously stated, it is not as complex as it appears.

Each of these modern methods follow one another in perfect order that may be easily understood and just as easily applied. Fruit grown under the methods indicated, is more than half sold when placed on the market. Good goods are always in demand at remunerative prices; poor goods are not wanted and when sold are usually sold at a loss.

Picking, packing and marketing are as much modernized as any operation of the orchard. Old methods and systems have given way to the improvements which were naturally the outgrowth of the twentieth century progress along all industrial lines. The people, in their advancement and enlightenment, demanded better fruit more neatly and attractively packed, and orchardists had to meet this demand or get out of the business. It must be remembered, however, that the impetus given by greater profits was, after all, the incentive which orchardists had to improve their methods, until orcharding can be rightfully classed on a par with our many great commercial enterprises, which is our national boast. *Delaware.*

Prune Grapes in Fall

MARTIN GLENN.

Prune grapes in fall, say the men in charge of vineyards at Amana, Iowa, where community farming is practiced. All the grapes are pruned in the fall. If it cannot be done as soon as the leaves fall, it is done at some other time before late in the winter. That plan has been found to give better results than pruning late in the winter. It seems to be because fall pruning makes the vines remain dormant later in spring, doing away with much of the danger from late frosts.

In pruning the vines, the idea is to keep as much new wood as possible. Old wood lessens the vigor of the vine. The trunk is renewed every few years by allowing a bud near the ground to develop into a strong cane. The fruiting wood is renewed often, the same as the trunk. After a cane has fruited one year, it is removed. Next year's fruit is borne on wood of this year's growth.

About fifty or sixty buds on four or five canes are all that are allowed to remain. Near the base of each fruiting cane a short spur is left, containing the four or five buds that are to bear the following year's crop. Vines are not tied to the wires until spring, for there are certain varieties which need covering during the winter. Otherwise they could be tied, except that some might have to be tied again in the spring. *Pennsylvania.*

Brown Rot Caused Heavy Peach Losses

Reports received by the Bureau of Plant Industry of the Pennsylvania Department of Agriculture indicate that the losses in the peach crop this year are exceedingly heavy owing to the rapid development of brown rot disease during the wet, humid conditions under which ripening has taken place. In many orchards a crop of the highest promise has dwindled down to little or nothing, and the general situation is reflected in the large amount of fruit offered for sale in an obviously unripe condition, the growers being compelled to take this step in order to forestall the rot and save something from the general wreck.

The disappointing returns from this year's crop will no doubt serve to stimulate a more general interest in this disease and induce the peach growers to take advantage of the well-known spray control means for combating what has been in the last two seasons a very destructive pest.

In a recent circular issued by the Bureau of Plant Industry of Pennsylvania the life history of the brown rot disease is outlined and spray methods for its control are given. In addition to spray applications, emphasis is placed on the destruction of the rotten fruit, and the general sanitation of the orchard so as to enlist as many agencies as possible in the fight against the disease.

Unless more modern methods are employed by peach growers for the control of brown rot, we may expect that the disease will continue to take heavy toll of the crop, and there will be high prices for the fruit, small return to the grower, and benefit to nobody.

Tests by the Department of Agriculture show that hens given meat, fish or milk products in their diet will lay from 38 to 66 per cent. more eggs than those fed only on grain.

Straight old nails can be used again, while the hopeless ones can be buried deep under the peach trees. Straightening nails is a good rainy day job.

"Let the hair go with the hide"

Specialists in tanning Horse, Cow, Calf or any kind of hide with hair or fur on it. We make robes, coats, caps, gloves, muffs, rugs, etc., to your order. You save money and we save your furs. Free catalog of stylish fur garments: Free instructions for handling furs. Fur garments and goods of all kinds repaired and made like new.

We mount large and small game, birds and fish. Write today.

ROCHESTER FUR DRESSING CO.
655 WEST AVE.
ROCHESTER N.Y.

LET US TAN YOUR HIDE.

Horse or Cow hide, Calf or other skins with hair or fur on, and make them into coats (for men and women), robes, rugs or gloves when so ordered. Your fur goods will cost you less than to buy them and be worth more.

Our illustrated catalog gives a lot of information. It tells how to take off and care for hides; how and when we pay the freight both ways; about our safe dyeing process on cow and horse hide, calf and other skins; about the fur goods and game trophies we sell, taxidermy, etc.

Then we have recently got out another we call our Fashion Book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.

You can have either book by sending your correct address naming which, or both books if you need both. Address

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.

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Easily Sawed By One Man.
Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

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Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price. Cash or Easy Payments.

30 Day Trial
10-Year Guarantee

Ottawa Mfg. Co.
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EVERGREENS
For Fall Planting

September is the ideal time for planting Evergreens. We have tens of thousands of thrifty specimens ready for immediate shipment. We ball and burlap them *without any extra charge.*

Write today for catalog describing Evergreens for lawns, hedges and windbreaks, also complete line of fruit trees and small fruits.

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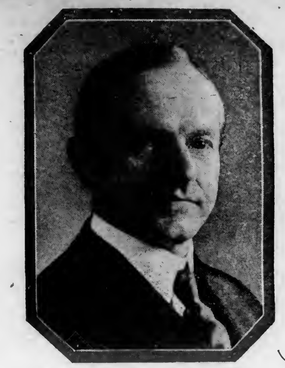
For President
WARREN G. HARDING



For Vice-President
CALVIN COOLIDGE

A Square Deal for the Farmer

If farmers of the United States think they have nothing at stake in this election—if they think it is simply a contest between the political "ins" and "outs" and that it makes no particular difference to the farmer which wins—they are making a very great mistake, and are likely to realize it when too late to help themselves.

In some matters of interest to the farmers the two parties agree.

For example, both favor strengthening the rural credits statutes; both recognize the right of farmers to form co-operative associations for the marketing of their crops; both favor extending our foreign markets; both are pledged to the study of producing farm crops.

Now, the matters mentioned are important, but not nearly so important as certain other matters; and in the way they look at these tremendously more important matters, we find a radical difference between the Republican and the Democratic parties.

The difference is so vital that if the farmers of the country once understand it, there will be not the slightest doubt as to which party they will support at the polls in November.

The farm voice in government

The Republican party in its national platform is committed to "practical and adequate farm representation in the appointment of governmental officials and commissions."

Are not farmers entitled to such representation? The Republican party thinks they are.

Under Republican rule, for sixteen years, that sturdy and faithful Iowa farmer, "Tama Jim" Wilson, was at the head of the great Department of Agriculture.

What happened when the Democrats came into power?

Why, they turned out "Tama Jim" and put in a university professor who knew nothing about agriculture and gave no evidence of caring anything about it.

Farm interests are vitally affected by the administration of the Federal Reserve banking system, by the Farm Loan system, etc. Should not thoroughly competent men who understand the farmers' needs and who have a sympathetic interest in agriculture be on these boards?

The Republican party thinks they should and says so.

Price fixing and price drives

Both parties were asked to promise to put an end to price-fixing on farm products and to government drives to beat down prices of farm products.

The Democrats refused to make such a pledge. The Republicans agreed and in their national platform are pledged to "put an end to unnecessary price-fixing and ill-considered efforts arbitrarily to reduce prices of farm products which invariably result to the disadvantage of both producer and consumer.

Do you remember what happened when we got in the war? Do you remember President Wilson's definition of a "just price"? He said:

"By a just price I mean a price which will sustain the industries concerned in a high state of efficiency, provide a living for those who conduct them, enable them to pay good wages, and make possible the expansion of their enterprises," etc.

And then do you remember what happened? Government contracts of all kinds were let on a cost-plus basis. That is, the manufacturer was allowed to figure all of the cost of every kind which he incurred (and he was not restricted in his expense) and in addition was allowed to figure a handsome percentage on top of all his expense and fix his price to cover everything.

Was the farmer allowed that "just price" which was granted so freely to others? He was not. Prices on some of his products were absolutely fixed, and without investigation of the cost of production.

One prominent member of the Democratic administration when asked about the cost of production of farm crops is reported to have said that this was no time to investigate farm costs of production; that it was the farmer's business to produce and not bother his head about the cost.

Throughout the war the farmer was frantically urged to produce by one crowd, while another crowd was using every device of market manipulation to hold down prices of farm products. **Was that fair?**

Government drives against farm prices

But, someone will say, we were in war, and the farmer should not complain about what it was necessary to do, even if they didn't do it to others.

Very well. Let us overlook what happened during the war. Let us wipe the slate clean up to the signing of the armistice. Let us consider what has happened to the farmer since the war ended.

The farmer has been urged to produce to the limit and had been assured that even if peace came, all he could grow would sell at profitable prices.

Do you remember the price drive in January, 1919, within three months after the armistice had been signed?

Do you remember the more determined drive in July, 1919, when hogs dropped from $22.10 on July 15 to $14.50 on October 15, although pork products to the consumer dropped on an average less than 10%? **In June, 1920, hogs were selling at $5.50 less per hundred than in June, 1919, but retail ham prices were $3.00 per hundred higher.**

As a result of the government drive the producer received less and the consumer paid more. Who benefited?

And do you remember the government drive of the last three months, and what it has done to the prices of grains and live stock? Within two months the prospective **value of the 1920 corn crop decreased three-fourths of a billion dollars.** Great advertisements announced that the government proposed to cut down the cost of living by dumping on the market the millions of pounds of government surplus meat at bargain prices.

Have you been making so much money on your cattle and hogs that you can afford further reductions in prices?

In July, 1919, No. 2 corn sold in Chicago for $2.19 per bushel; in July, 1920, for $1.56, a decrease of 29 per cent. In July, 1919, steers sold in Chicago for $15.60; in July, 1920, for $15.00, a decrease of 4 per cent. In July, 1919, hogs sold in Chicago for $21.85; in July, 1920, for $14.85, a decrease of 33 per cent. The decrease in wool prices was 25 per cent. In beating down prices of these products did the government help the consumer?

According to the United States Bureau of Labor Statistics, the consumer paid **24.1 per cent. more** for his **food articles** in July, 1920, than in July, 1919. He paid **12.4 per cent. more** for his clothing; **47.4 per cent. more** for his fuel and lighting. During the same time, metals and metal products **increased 20.9 per cent.**, lumber and building material **79 per cent.**, house furnishing goods, **47.8 per cent.** But according to the same authority **all farm products** had **decreased over 4 per cent.** in July, 1920, as compared with July, 1919.

We shall not deal further with this sickening story of incompetent and inefficient government meddling. You know the story in most of its details.

As you think it over, remember this one outstanding fact: That the **Democratic party, if continued in power, is committed to the same sort of a policy in dealing with the farmer and stockman** that it has followed during the past two years. It was asked to promise to stop officious meddling which benefits only the speculator and the profiteer, but it refused to make such a promise.

In justice to themselves and their families and the generations to come after them, the farmers of the United States should put in power the Republican party, which realizes its obligations to them and to all other classes of citizens, and which further realizes that if the farmer is not given a square deal, our agriculture is going to be wrecked.

Talk to your neighbors about these things and make sure that they understand what a vital interest the farmer has in the presidential election November 2.

Republican National Committee

Republican National Committee,
Auditorium Hotel, Chicago, Ill.

Please send me, free and postpaid, copy of Senator Harding's Address on the present day problems of the farmer.

Name.....

Address.....

Grit

F. V. L. TURNER.

While the habits of poultry are more or less generally well known, the interior of the hen is a deep and difficult mystery to the poultry keeper.

It is natural that this should be so—few poultry raisers have the time and inclination to delve into the anatomical research, and few care to contribute the necessary egg layers or meat producers to such research.

On the other hand, there are those who must do just those things, not only to inform themselves, but to inform others, and all of which goes to prove that unselfishness is still existent, and that the milk of human kindness still flows in the human make-up

To look inside the hen and to know why she is and why she does; to know her organic functions and to recognize their ability to maintain health, to contract disease and to digest and assimilate feeds and convert certain portions into bone and muscle, feathers and skin, flesh and, lastly, the remainder into eggs, is to get the best from her as nature's adjunct to human economics.

Now then—obviously we must so supply the sources that convert feeds into bone, flesh, muscle, feathers and eggs that they will give forth the fullest capacity of the hen's inherent ability, and when we fail or cease to do that very thing, then our poultry becomes weak, sickly and unable to make eggs. Hereby hangs the tale of many a failure in hendom. Open a dozen hens; we find in one a pale, sickly liver, not the controlling organ that should be laden with the darkness of virile blood and good health. At the same time we find the gizzard devoid of fat, the outer coat of fat that comes from only two things, either a system perfectly assimilating feed and producing eggs in goodly number, or a sterile or partial producer that eats for pleasure and not profit. Likewise this pale-livered bird has not (because she was not in condition to) secreted any fat along the intestinal tract, a victim of some ailment to which the hen is heir. As a mechanical device the hen eats feeds, depositing her meals into her crop; the crop furnishes the first dose of gastric juices and enables the meal to pass, next, to the gizzard, the teeth of the fowl. More gastric juices are here employed and it is now that the test comes that works for or against good health, body development and maintenance and therefore eggs or bodily and functional failure. The gizzard of the hen is, in fact, her teeth; as she is supplied with grit (to be operated by nature's most powerful muscle) so she chews her food, and the harder the grit the finer the food is ground and, therefore, the greater the assimilation.

Observant poultrymen find the rapidity with which grit is voided is an indication of its hardness, and consequently, fitness. A hard grit is more slowly voided than a softer or soft grit. Economy indicates the use of the hardest grit obtainable, not only because less is used, but because less food is voided. Food coarsely ground by soft grit and voided has no value as a body builder or egg maker. Finely ground food, too fine to be voided, and, therefore, thoroughly assimilable, is the secret of proper organic functioning, health and heavy production.

Poor gizzard action means stagnated liver and atrophy of one or more organs, including the egg cells. It also means that every organ of the body is going on the decline sooner or later.

Chickens will, under force or pressure, eat any available material for grit, and any material includes bits of metal, glass and any substance that will help them perform naturally. This little trip on grit, through hendom, is of vast importance—the harder the grit the longer the life of the hen, and the more prolific her production.

Pays to Market Spring Cockerels at Two Pounds

With the present price of feeds, farmers cannot afford to keep their spring hatched cockerels until the holiday season to sell them. After a growing cockerel reaches 1½ to 2 pounds it is an inefficient consumer of feed for meat production.

The price of cockerels is always higher during the spring and summer months than in the fall when many farmers dispose of their surplus cockerels. The slump in price is due to two causes: (1) The large size cockerel is less desirable on the table. (2) The cockerel must compete on the market with the surplus hens, with a resulting slump in price.

In case the cockerels have been kept until fall they should be crate fattened, as they will then bring a premium on the market. The birds should be confined in a small coop or fattening battery and fed twice a day on the following ration: 70 pounds of corn meal, 30 pounds high grade shorts or middlings, and 10 pounds of wheat bran. This should be mixed with sufficient sour skimmilk or buttermilk to make a mixture of the consistency of a thick cream. The birds should be starved 12 hours after putting in the crate and then fed all they will clean up of the above feed in ten minutes. The amount of feed can be gradually increased until two full feeds a day have been supplied. No water should be given during the feeding period. A gain of 25 to 40 per cent. can be made in 12 to 14 days.

Our Thanksgiving Friend

WM. HART HARRISON.

Thanksgiving is only half observed when the turkey is absent from the dinner, with its highly flavored cloud of steam and sundry tantalizing odors trailing in its wake. The turkey is first in the hearts of his countrymen during the holiday season.

However, not every turkey is fit for a king, or a feast, as a turkey is only a turkey when it is in proper condition and properly cooked. Some people will buy turkeys at any cost or in any condition; just so they are getting a turkey, seems to be all they are after. Off to market or to the store they go, with a huge basket hung on their arm, and there they purchase our feathered friend, the turkey, and often, oh, such a turkey it is! None of your old, poor, thin, bony variety for me, if you please, but the very best that money can buy, the one that is well fattened, yellow, of a sweet, fresh odor, dry picked and presenting an attractive appearance. For the possession of such a turkey, the dealers will strive, and the man or woman with the market basket will often go to the very bottom of his or her purse. The man or woman raising such birds need not be in debt nor have a mortgage on the farm. No poultryman ever yet had difficulty in disposing of or obtaining the best market price for such turkeys.

If you will only take a glance at the different stalls in any of the markets, you will often find them plentifully supplied with common or ordinary stock of turkeys, but the nice looking, large, plump, yellow-skinned, rich looking, well fattened and neatly dressed birds are generally scarce and hard to find.

Now, if such quality birds are so much in demand, and command such extremely high, or best, prices, what is the cost of producing such over those of common or ordinary grades? If you will only consider for a moment, you will find that it is very little in comparison to what the gain will be.

Here is the secret: It simply requires a little better feeding, a little more whole corn and second grade wheat and oats mixed, then fed liberally about two weeks prior to marketing, and a little more care or painstaking when dressing and preparing for market or shipping, to make the difference in value equal to several times the slight increase in time, labor and expense required. It is best to feed the whole corn ration late in the afternoon, and the mixed grain feed in the morning. You might give just a little at noon. Be sure to provide an ample supply of pure drinking water for them, as water is very essential for fattening.

Virginia.

The World Moves

WALT MASON.

Nowadays we see the tractor doing duty, like a charm; it's the most important factor in the business of the farm. Oh, we see the farmer sitting on a spring seat painted green, and a wondrous gait he's hitting, as he tools his weird machine. Horses look to him like fakers, and for mules he'd give no mon; for he plows a dozen acres where a team would fail at one. As I view the mighty tractor olden times return to me, when I was a tragic actor in the scenes of husbandry. One old mule was my allotment, one old mule of brindled gray, and she knew just what a swat meant, for I larruped her all day. All the weary day I whacked her, soaked her ribs and then again, and I longed to have a tractor, which was not invented then. With a club her ribs I polished, hoping thus some speed to gain; but all schedules were abolished by that mule, and clods were vain. All my better years were squandered in this slow and futile way; up and down the field I wandered, slow as goose grease, through the day. And the mule—at last I sacked her, and took up a fountain pen, sore because the useful tractor had not been invented then.

An overworked wife and a broody hen are both intensely nervous, and both need a long, complete rest.

Dress should adorn the beauty of the human body and conceal its defects.

1000 Eggs In Every Hen

New System of Poultry Keeping—Get Dollar a Dozen Eggs—Famous Poultryman

TELLS HOW

"The great trouble with the poultry business has always been that the laying life of a hen was too short" says Henry Trafford, International Poultry Expert and Breeder, for nearly eighteen years Editor of Poultry Success.

The average pullet lays 150 eggs. If kept the second year, she may lay 100 more. Then she goes to market. Yet, it has been scientifically established that every pullet is born or hatched with over one thousand minute egg germs in her system—and will lay them on a highly profitable basis over a period of four to six years' time if given proper care.

How to work to get 1,000 eggs from every hen; how to get pullets laying early; how to make the old hens lay like pullets; how to keep up heavy egg production all through cold winter months when eggs are highest; triple egg production; make slacker hens hustle; $5.00 profit on every hen in six winter months. These and many other money making poultry secrets are contained in Mr. Trafford's "1,000 EGG HEN" system of poultry raising, one copy of which will be sent absolutely free to any reader of this paper who keeps six hens or more. Eggs should go to a dollar or more a dozen this winter. This means big profit to the poultry keeper who gets the eggs. Mr. Trafford tells how. If you keep chickens and want them to make money for you, cut out this ad. and send it with your name and address to Henry Trafford, Suite 889M Tyne Bldg., Binghamton, N. Y., and a free copy of "THE 1,000 EGG HEN" will be sent by return mail.

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How Dynamite Helps Farmers

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1302, Nov. 1.—At least the boarder hen is getting what is coming to her. The great trouble is most farmers and farm women are unable to detect the non-producer despite the fact that she carries many unmistakable signs to the experienced culler. If you have had experience in culling out the boarder hen, pass it along, giving us your successes and failures.

TOPIC No. 1303, Nov. 15.—Let's discuss our practical experience in underdrainage. What kinds of soil have you underdrained, what difficulties have you met and how have you overcome them? How about subsoiling with dynamite? Please give us the *"why, how and when"* of your experience in this important matter.

J. E. F., Wellsboro, Pa.—I have used several hundred pounds of dynamite in the past, to blow out stumps, rocks, etc., and have had both good and poor success. In blasting stumps much depends on the soil. In a clay subsoil, and if the stumps are not too large, mighty good work can be done. One stick of 40 per cent. dynamite will blow out any ordinary stump, but if stumps are large it takes more—have used 7 sticks to blast out one large pine stump. I do not think it pays to blast large pine or hemlock stumps. Have found that it is much cheaper to pull such stumps with a stump puller.

To rid a field of shell rocks dynamite is the stuff, as it shatters them all to pieces. For blasting rocks I use from one-quarter to two sticks, according to the size of the rocks. Great care should be taken to place the dynamite well under the center of stumps or rocks, and tamp well with fine dirt. I use part of a broom handle to do this. Have used dynamite for subsoiling, but do not think it pays on our soils.

Have neved used any for orchard planting, but believe it is O. K. Were I to plant an orchard again I would use dynamite, by all means. I would lay out and mark out the ground and do the blasting in the fall, using about one-third stick of 40 per cent. dynamite to a hole, then plant the orchard the following spring.

Have also used it for digging post holes, when I have come in contact with rocks. One-quarter stick will do wonders for such work, and save much hard labor.

The tools I use for blasting rocks, stumps, post holes, etc., are a good sized crow-bar, a piece of broom handle about 3 feet long, a lead pencil and twine. Great care should be used to securely tie the fuse and cap to the dynamite. This will save all trouble of having a missfire and may be the means of saving your life.

C. C. C., Jr., Penn Laird, Va.—We have found dynamite so useful on the farm that we are never without it. More farmers would never be without dynamite if they would only get the idea out of their heads that dynamite is only useful or profitable for blasting rocks or stumps. I once harbored such ideas myself, until I became better acquainted with dynamite, when I discovered there was simply no end to the value and usefulness of dynamite on the farm. Dynamite is a tremendous power harnessed up and all ready for use, that, once understood and intelligently put to work, will do an endless number of hard jobs on the farm in short order, at a great saving in time. The dynamite route of doing work is not always the cheapest route. Like the automobile, its chief value lies in its ability to turn off a tremendous amount of work in short order. Take, for instance, a little experience we had with dynamite last summer. When ready to haul to the barn a 30-acre field of wheat, we discovered a new route that would lessen a long haul by half the distance, by merely opening a fence. The only trouble was a tremendous stump squarely in the road at the fence opening. Five sticks of dynamite and ten minutes work removed stump, opened road and put the field of wheat in the barn in two-thirds the usual time.

We are continually finding similar use for dynamite and frequently at a busy time. In addition to using dynamite for blasting rocks and stumps on the farm, we straightened a creek with it, dig ditches, blast holes for fruit trees, split logs, blow out standing trees, blast holes for dead animals, etc. In short, we are continually finding use for dynamite about the farm, and are never without it. We keep dynamite in one building and caps in another, to avoid an accidental explosion. We keep a complete set of stone drilling bits of various lengths and sizes and when a stone becomes objectionable in the fields we blast it out with dynamite. Frequently it can be blown to atoms by merely spudding a hole behind it in the earth with a spudding iron, which we also keep on hand in various lengths and sizes. With these simple, inexpensive tools we are able to get full value from the use of dynamite. When we find a hard job on the farm confronting us we first think of dynamite and frequently devise some plan to use this harnessed-up power profitably, time and labor considered.

Mrs. O. J., Rio, La.—Explosives are quite commonly used to remove stumps from cut-over pine lands in this section. It is impossible to pull, or even burn, large yellow pine stumps without first loosening or splintering with a charge of dynamite. We had a field we intended planting in peach trees. In it were 147 stumps from 1 to 4 feet in diameter. My son (then 15 years old) and I decided those stumps must come out. We hired a man who had experience in handling explosives to help us a day. By the end of the third day we had the majority of them out, the rest bursted and split until it was an easy matter to burn them. We used less than 100 pounds of dynamite. We had a huge pile of fire-wood, worth several dollars, and the rest of the cost has been saved many times over by lessening the cost of cultivation and extra crops raised on the ground occupied by the stumps. The young trees grown in and beside the blasted spots have outstripped some of twice their age on the farm.

Many persons hesitate to use dynamite because they think it is dangerous. There is an element of danger in its use, but anyone who will exercise reasonable care and follow instructions furnished by the manufacturers, can safely use the low grade dynamite used for stumps.

The most important, as well as the most laborious, part of the work is making the holes. We used a 2-inch auger for most of ours. We dug under a few of the larger with spade and bar, but only succeeded in splitting the hearts of these. The best plan is to bore a hole at an angle of 45 degrees until it reaches a point about the length of the charge beyond the center of the stump; put in the charge, tamp in lightly, if directed, place primer on charge, sift in fine soil to a depth of a few inches, pack lightly, shovel in damp soil and pack until the surface of ground is reached, light fuse and retire to a safe distance. If it does not go off at once go elsewhere and work until next day. One of our neighbors got his eye put out and face badly lacerated with flying splinters on going back to investigate a tardy fuse.

M. M. C., McKees Rocks, Pa.—Dynamite is one of the quickest and best things to use in clearing land of stumps or old trees. One needs to be careful in its use, but we need to be in the use of everything of an explosive nature. If the stump is small, one stick is sufficient, but if it is large, three should be used. It is better to use a heavier shot, for if a light one is used the ground is loosened so that one does not get results when you try the second shot. Drill a hole with an auger under the center of the stump, or beyond, having the hole sloping down. Make a small hole in the end of the dynamite, attach and tie the cap and fuse to the stick. Drop the dynamite in the hole, tamping lightly around it with earth, then more earth and tamping more solidly, until the hole is filled up. Light the fuse and run away. If this is done properly the stump will be blown out. Have used the above method for blasting in post holes where the rock was solid and it was very successful, using only half a stick unless there was a good bit of rock. A neighbor used dynamite in planting his trees and they grew more rapidly than others that were planted in the old way. The ground was loosened so that the moisture penetrated it, and this being around the roots of the trees, made them grow, though it was a very dry season.

J. W. R., Carbondale, W. Va.—Eleven years ago I began experimenting with dynamite on the farm. I used it to break the subsoil preparatory to planting an orchard. I had my rows staked and at each stake I drilled in the ground to the depth of 3 feet and put in a charge of one and one-half sticks of dynamite. The subsoil was broken to a depth of 5 feet. I set my trees, mostly apple, over the broken earth. I also, for experimental purposes, set out one row in the usual way, i. e., by digging a hole with a spade and crowding the roots into it. Results: In five years the trees that were set on the subsoiled land were 90 per cent. in bearing and only 5 out of a total of 320 had died. The row which I set in the usual way showed only about 5 per cent. bearing capacity. They were yellow and stunted in comparison to the trees set on the subsoiled land, and out of the 30, nine had died. Does dynamiting pay on the farm? Well, I think that this one example answers the question.

W. C., Brenford, Del.—I have been using dynamite on the farm for myself and neighbors for several years and have found it very successful. Last spring I had a large bottom full of water, with no way of draining, so used dynamite in the center of pond and shot wells and in four or five days it was dry. There was about one acre under water. My next neighbor then had me do likewise with bottom on his place, with like results.

Have also used it for tree planting, and find in one year the trees are as large as two-year-old planted with spade. It is also the cheapest and quickest way to remove stumps. I have tried it for subsoiling, and grow larger and better crops where I have used dynamite, and I find it pays well in low, flat ground, to subsoil.

H. G., Waldorf, Md.—I started blasting on my farm in 1911, and have been using dynamite to help clear my neighbors' farms and my own farm ever since. When I sent for my first dynamite I knew nothing about it, so I asked the manufacturer to send me instructions, and from those simple directions I went right to work. I first punched a hole under the stump (these stumps were mostly tap root pine and been cut several years) trying to get under a shoulder and as close as possible to the tap root, having the hole 2½ to 3 feet deep; the larger the stump the deeper the hole. The stumps measured from 8 to 14 inches across, and I used from ¼ to ¾ lb. of 40 per cent. Red Cross dynamite. After I got the hole in the right place I cut a piece of fuse about 30 inches long and crimped a cap on the end. In putting blasting cap on fuse, push the fuse in as far as it will go, then with the handle of cap crimper punch a hole about 2 inches in end of cartridge. Tie a piece of twine on fuse about half an inch above cap, push cap in dynamite cartridge and tie the loose ends of twine around the stick of dynamite, so that in lowering cartridge in hole it will not fall off. I then press dynamite to the bottom of hole, using a broom handle for tamping stick, then put loose soil on top of dynamite and tamp lightly at first, then more soil and tamping until hole is filled. In lighting fuse in the wind I find it much easier to light if the fuse is split one-quarter inch and opened out. We never dig any stump larger than 3 inches in diameter. We use one-sixth pound of dynamite for very small stumps. If we have to clear a small clump of bushes, 3 feet across, we make a hole under the center and put ½ lb. of dynamite under For small live stumps I put dynamite close to the wood a little more than half way under stump. To shoot large green stumps with cap and fuse I make a hole a little more than half way under stump and shoot one-sixth pound at the bottom of hole without any soil on dynamite. This springs the hole at the bottom and allows you to put all the dynamite necessary to blast out the stump, right under the stump where it does the most good. In shooting this blast it is advisable to go a good distance away. If the charge is not more than 3 lbs. use a small piece to spring hole, but where it is necessary to use 7 or 8 lbs. use about ¼ lb. to spring hole. Stumps and roots come out best when soil is damp. One advantage of using dynamite, over the stump puller, is that there is no soil on roots.

Wrapped Up in Itself

TEACHER.—Who can tell me what a cow's skin is used for?

SAMMY.—I kin, teacher! It's used to keep the cow's meat in.—September Boy's Life.

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

NOVEMBER 1.—The play room and playthings for small children. What toys can be made at home? What games entertain your little ones most?

NOVEMBER 15.—Thanksgiving Day used to be a joyful "harvest home," and an occasion for the expression of heartfelt gratitude to God for His many mercies to us as a people and as individuals. It's a pity that many have drifted away from the original idea of the day. If you maintain the real old-fashioned Thanksgiving Day won't you please *tell us all about it?* Perhaps you can help some "drifter" to get back into the spirit of it.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

The Winter's Pork and Beef Supply

Mrs. H. C. R., New Paris, Pa.—After once using the following meat cure for curing pork for later use, or indeed until next butchering or later, few ever use any other. For 250 pounds of meat take 2½ quarts of salt, ¼ lb. saltpetre, 1 lb. brown sugar, ½ lb. black pepper, ½ box cayenne pepper, 1 qt. boiling water. Mix all the ingredients, pour the boiling water on them, let stand on stove a while, then while boiling hot wash the meat thoroughly with the mixture on all sides excepting where the outside skin is. Be sure to wash the meat while yet warm. Use the same wash, adding more water if necessary (be sure wash is hot)every day for three days. After the meat has set for a week rub lightly with powdered borax. This insures its keeping, and bugs will not bother it.

I always like to stuff the bladder (after being thoroughly cleaned) with sausage. Wash it with the above meat cure and smoke it a little; it then keeps as long as you like and is great during harvest. I keep some of my surplus sausage for summer use by frying it. I fry slowly in oven or on top of stove until the water has all been fried out and meat is fried a nice brown. I then put in jars or crocks and run hot lard over it. I pour water in the pan in which I fried it, cook it up well and pour over some of the sausage I put in jars, then pour hot lard on the top of this and seal. It keeps fine. Sirloin and spareribs are put up the same as sausage. I always take some of the sausage and pack in a crock and run lard on the top. This is nice and fresh when opened for winter or spring use, while if kept otherwise it would be strong.

In curing beef my husband cuts a part of it, or some of the tender parts, into nice pieces. I then put it into a tub and salt heavily and let stand for about a week (5 days would be long enough). I then take out, run strings through one end, hang up in attic until dry. I like it smoked when dry; it gives it a good flavor.

Here is a recipe for pressed beef: Take the desired amount of the cheaper pieces of beef, and let there be a little fat, so that it will be "marbled" when pressed. Lay in weak brine over night, then rinse and boil until tender, or until it will fall apart easily. Water may be added at any time, but only enough should be used to keep it from burning. Keep closely covered so as to retain the flavor. Remove the meat from broth and chop fine. Skim all the grease from the liquor and add to the liquor a tablespoonful of gelatine for each 5 pounds of beef. Boil the liquor down until the gelatine is dissolved and the liquor is a jelly. Mix it, with a little salt and spices to suit the taste, in the chopped beef; pack in jars, cover with a plate and weight down. It will keep several months in winter. Slice when wanted for use. When using, keep it covered with a cloth wet with salt water.

Mrs. E. M. A., Ashville, N. Y.—I don't like to put up pork when I am very busy, because so many operations are required in the process of caring for a hog, but we think we have it simplified as far as possible. Our folks are very fond of sausage, so we usually make the shoulders and all the odds and ends up that way. Some of the side pork is simply packed in salt and a brine poured over it; the rest of the side is pickled in the same receptacle with the hams and smoked for bacon. The ribs are used up while fresh, and a part of the souse not used for sausage is put in head cheese.

Brine for hams and bacon is made as follows: For 100 lbs of meat take 3 lbs. brown sugar, 6 lbs. coarse salt, 2 ozs. saltpetre, 5 gallons water. Let come to a boil, skim well and pour over the meat while hot. Have the meat firmly packed.

SAUSAGE.—To 40 lbs. of meat add 1 lb. salt, 3 ozs. ground black pepper, 1 tablespoonful ginger, 1 teaspoonful of saltpetre. Mix well and pack in jars.

HEAD CHEESE.—We use souse instead, not the feet, but the next joint. Cook until it drops from the bones, run through food chopper, season highly with salt and pepper and add a little ground cloves. Place in a deep dish under a weight and pour over the cheese the liquor in which the meat was cooked. Slice thin and serve with mustard.

Beef is more simple. If one cares for corned beef it may be prepared in the brine left from hams and bacon after the pork is removed for smoking. We prefer it canned, so I cook it until about half done, salt and pepper to taste, cut in pieces and pack in sterilized jars. Fill jars with broth, adjust tops but do not put down clamp. Boil 2 to 3 hours in boiler or large kettle, remove covers, fill to overflowing with hot broth or suet, adjust rubbers and seal. I still have several jars which was put up last fall and it is exactly like fresh beef. We used it all through haying and harvest and will continue to do so for some time to come.

Mrs. O. J., Rio, La.—To brine cure pork, for each 100 lbs. of meat use 8 lbs. of salt, 2 lbs. of sugar, 2 ozs. of saltpetre in 4 gallons of water. If weather is warm it is best to boil the brine and let cool over night. Rub each piece of meat well with salt and spread to cool. When ready to pack put larger pieces in bottom of barrel, bacon sides and jowls on top. Pour on the brine and be sure it covers the meat well. Allow three days for each pound in sides and four for hams and shoulders. For example, 60 days for a 15-pound ham. A few days longer does no harm. When meat is taken from the brine it should be washed in warm water, wiped dry and covered with molasses and black pepper. It should be hung and smoked with hardwood chips or corn cobs two to four days, after which each piece may be wrapped in paper and the joints put in muslin sacks and tied to keep insects out. I think we got this formula from a government bulletin. In case the brine gets ropy, pour it off and boil, or make fresh brine, but we have used it several years and brine never has become ropy yet. We always make sure container is perfectly clean and sweet.

Scrapple is made from waste pieces of meat, trimmings of hams, the head, liver and boney bits of sausage meat. Soak the heads in soda water and clean. Boil all meat until it slips from the bones, chop fine, strain the liquor and set on to boil; stir in corn meal to make a thick mush, stirring constantly; put in the meat, mixing thoroughly and seasoning to taste with salt, pepper and sage. Put scrapple away in pans in a cold place. To cook, slice, lay in pan, set in a hot oven until it bakes a nice brown.

SOUSE.—Soak and clean heads and feet, put on in cold water and simmer until bones slip; chop meat, season with salt, pepper and thyme or sage, pack closely in a crock or pan until cold. Remove any fat which may gather on top, cut into pound blocks, pack in stone jar and cover with vinegar, which may be spiced or not, as liked. Serve cold with meats or salads. Is nice with potato or rice salads.

CHITLINGS.—Split open and remove contents from stomach and large intestines, wash and soak over night in brine. Next day scrape the inner linings off, soak in salt water three days, take out, wash in fresh water and put on to boil with a pinch of soda or a spoonful of vinegar to hasten cooking. Boil until tender. When ready to cook roll in corn meal or shorts and fry. Time of boiling depends on the age of the animal

DRIED BEEF.—Use the tender muscles. For every 20 pounds use a pint of salt, 1 teaspoonful of saltpetre and ¼ lb. of sugar. Divide the mixture into three parts and rub one-third well into the meat each day for three successive days. Turn the meat daily in the little brine it makes, for a week. Then hang to dry, but do not smoke. Before flies come in the spring wrap in paper and hang in a flour sack in a cool, airy place.

Mrs. C. S. F., Louisville, Ky.—We cure pork in the following manner: First the meat is cut and trimmed while yet warm with animal heat. Then it is left to chill over night with no further attention than merely to see that it is free from disturbance of any kind. The following morning a layer of salt about half an inch thick is spread on a long bench on which the meat is to be kept. The meat is placed in layers on the salt, the middlings, or sides, forming the first layer, the hams and shoulders the second and third, etc. Over each layer of meat is placed a layer of salt half an inch thick. The meat is left packed in salt in this manner for six weeks, after which it is taken up for the final curing process. After it is taken up the salt is first brushed off, then washed off with a clean cloth and warm water. After washing, the meat is wiped off with a clean, dry cloth and while yet damp is sprinkled with black pepper and borax. Last year we used 3 ounces of pepper and 12 ounces of borax for about 400 pounds of meat. After the pepper and borax have been applied the meat is then hung up for smoking. For this process we use hickory wood, if obtainable, but if not, most any kind of wood will do. This process continues through several days, during which time we try to keep as much smoke and as little fire as possible. When the meat has turned a nice dark brown we call the job complete and leave the meat, all of it, hanging just where it is until needed for use. We never trouble to sack hams, are never bothered with skippers, and the meat has a rich, delicious flavor.

Mrs. K. R. G., Pine Bush, N. Y.—To make head cheese, boil the pig head in water to cover, and let it boil until the meat falls from the bones; this takes quite a long time. Separate all meat from bones and strain the liquid to remove small particles of bone. Then cut the meat in very small pieces. Trimmings and other parts of the pork may be used along with the head, and the tongue is especially good cut in. These should be cooked along with the head, then cut. After all the meat is cut, return it to the liquid in the kettle, add more water and five cents worth of whole mixed spices, ¾ cupful of vinegar, salt and pepper to taste, ½ lemon cut in thin slices; cook until all are thoroughly blended—about three-quarters of an hour. Then pour into pans or deep dishes and set away to harden. Then it can be turned out on to plates and sliced.

To make good sausage meat, grind pork and some beef together—about four parts pork to one part beef. All trimmings and rind may be used. Mix well with the following: To 6 pounds of sausage meat add about 3 tablespoonfuls of salt; pepper, thyme and sage should be added to taste. To keep, pack in dishes and cover with lard. Keep in a cool place.

Liver bologna is made as follows: Cook the liver and some pork. Use a little more pork than liver. When soft, take from kettle and grind fine; return to kettle, add salt and pepper to taste, a little sliced lemon and cook all until blended. Cook in very little water—just enough so it does not burn. Pour in dishes same as sausage meat. If one has a bologna filler it may be filled in the skins, and some is good smoked.

Mrs. W. H. S., Bridgeton, N. J.—We cut our sausage meat twice, making it nice and fine. Sometimes put it in skins, sometimes make round cakes. A fine way for keeping them is the following: Fry (not as much as you would for eating immediately), then place in an agate pan, packing layer after layer until the pan is full, then melt lard and cover; put a weight on them to keep them solid until cold. When wanted for use set pan in oven until the lard melts. The cakes can then be removed without breaking. Put them on the stove, finish frying and you will find them fine. I do my lean meat the same way. Have kept both until late in the summer.

Mrs. M. M. C., McKees Rocks, Pa.—We read in so many of the farm papers so many recipes that require so much labor that I feel like giving our method of curing pork, which is so little work.

As soon as the meat is cut up, the hams, shoulders and sides are rubbed all over with salt, just what they will take in nicely. The meat is then placed in a barrel, where it remains for six weeks. It is then taken out, scraped and wiped with a clean cloth, dusted all over with borax and hung in the cellar. If the weather is very damp and there is a tendency to mold, wipe off and apply borax. We have never had any to spoil; the borax keeps the flies away, although we have our cellar screened, and the meat will keep any length of time. We do not smoke our meat, and if it is once tried, those who smoke it will not want to go back to their old way. Then meat fryings are so much nicer when the meat is not smoked.

Our sausage is cooked when fresh. We make it into cakes, fry, place in glass jars with 8 tablespoonfuls of its own fryings in each jar, seal and dip the top of the jar in paraffine. This is delicious and will keep if done carefully.

Our head cheese is made by cooking the head meat, liver and heart, sometimes stirring in corn meal to thicken it, and sometimes just add a few onions to it. Then slice it and fry.

Mrs. J. A. V., Johnson City, Tenn.—The way which I have been keeping sausage for the past ten years is, after mixing thoroughly, pack tight either in gallon or half gallon crocks, just as you wish. If in gallon crocks, place in stove and bake five hours; if in half gallon crocks, bake three hours. It will then all be immersed in melted grease. Tie tightly with a cloth and put a plate or cover over crock. It will keep fresh for a year.

I am going to give my way of curing hams, which I have used for many years, and which I have been told by some of my customers were the best flavored hams they ever ate. First, after the hams have been trimmed of most of the fat, I rub salt and saltpetre all over the ham, particularly around the bone, pack in box or barrel with more salt between each ham; let them lie for six weeks. Then I make a strong tea of red pepper and dip each ham until it is wet all over; while wet I sprinkle with powdered borax. Let dry, then wrap in paper, put in cloth bags and hang up. Try this way once and you will try it again.

Our Fashions and Patterns

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FASHION DEPARTMENT,
THE PRACTICAL FARMER,
PHILADELPHIA, PA.

Peace, Harmony, Good Cheer

MRS. JENNIE KELLER.

My idea of a "homey" home is where peace and harmony reign. A neat, attractive home, with meals on time and served with cheer and kind words, is better than a mansion with all its grandeur, if true happiness is not there.

I live on a 140-acre farm, have a family of ten to look after, and still find time to play with the children. We sing, play the piano, read and work together, and always look at the brightest side; sometimes the bright side is covered with dark clouds, but with a little tact and ingenuity the brightness will shine forth.

So many busy mothers find it too much trouble to have the pretty little frills that make home homey. For instance, our dining table is never without its centerpiece and bowl of flowers, if there is nothing but clover blossoms or autumn leaves to put in it. Another thing, some people spend hours embroidering pillow tops to stack on the couch, but I make mine of burlap and cretonne and we can take them anywhere without soiling them beyond recognition—a hammock on the porch, a swing on the lawn for the noon hour and evenings of the tired men—and the women, too; let the women stop their work and all enjoy the noon hour together, for the woman that works all the time without recreation is very foolish. She must systematize her work.

Another thing is lighting the home. What is so gloomy as a dim, sickly light? Kerosene lamps can be made to shine so very brightly by keeping them scrupulously clean and boiling the burners in water with soap, vinegar or sal soda—or baking soda will do.

And above all, don't paper your walls with a dark, gloomy paper, for a light paper will make it more pleasant and "homey." Our eldest, a boy of 18, still stays at home to work on the farm; while I know he loves to drive a truck and work around machinery, he stays at home and takes an interest in cows and setting hens, while a number of boy friends are working in factories. Our eldest daughter is perfectly contented at home, while so many young girls are in shops and factories. They get the fever to leave home only too soon. Mothers, keep them young, happy and contented by making home homey. You will find the way if you plan and think. *Michigan.*

A WOODLAND MUSICIAN

EDGAR L. VINCENT

FROM our farm home in the valley we can look up the hillside to a piece of wood perhaps a quarter of a mile distant. As long as there are any birds anywhere, some of these feathered friends are singing in the tops of the trees up yonder. Among others that come in the early summer is the thrush. How we do enjoy its sweet, mellow lilt! In the still morning, often while we are resting before the work of the day, the soft notes of the thrush's song charm us and awakens in our hearts a longing to live and to be better men and women.

Another musician of the forest comes a little later. It surprises me to know how this bird ever found out that when he strikes his bill against the side of a dry splinter at the top of a broken tree a musical sound will follow. But then, birds, as well as all creatures of nature, have a way of learning things that is to us mortals past finding out.

And it sounds good to me to hear the rat-tat-tat this bird plays on his splinter. By striking the stick at different points he gets a variety of sounds, some deep like the bass strings of a harp, and others sharp and more like the upper notes. There my friend of the feather sits and drums to his heart's content, while I stand and drink in the simple music, my soul rested, my spirit ready for the song God puts into my own heart.

Sweet musician of the forest, let me learn of thee this lesson. If I have but a splinter from a broken treetop, and I strike it right, it will vibrate right royally and carry cheer to some tired man on life's road.

For often I am foolish enough to think that if I have not a harp of gold, with strings of costliest material I cannot make music that is at all worth while. And how can I get an instrument of such value? Somehow I have not been endowed with gold for that. I must treasure my resources very carefully lest I come to want. So my song goes unsung, my symphony is never played. No friend is helped and cheered by any music I make.

Let me take the thing I have, be it no more than a sliver from a treetop broken off in the wind, and use it as God would have me use it, and be sure that my own soul will be the richer for it and others who listen will be inspired to purer, sweeter living!

"Home Cogitations" from the N. J. State College of Agriculture

That handsome new silk which you have spent precious days in making up, spots with every drop of water. Wring a cloth from hot water, lay evenly on the wrong side of the dress and press as dry as possible with a medium hot iron. Go over the whole dress and your troubles will be over.

Large holes will always be found in Johnny's stockings. It is a result of Johnny's nature. His mother expects it, but if she is wise she used black mosquito netting as a strong foundation to darn over when attacking those particular holes.

Cook books blandly tell us to test cakes with a broom straw—new wooden toothpicks appeal to us as being slightly cleaner.

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A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER IH.

The clocks droned away the night. Marise, lying rigid, with racing pulses, told herself hourly that she was entirely cool and sensible: she quite recognized that the child of Mrs. Healy's sister could not very well be her child. There was a resemblance, or else she imagined one; she would do well to have a talk with Mrs. Healy, simply to set her mind at rest. She expected nothing whatever.

Detachment from her body was one of Marise's most prized attainments. Bit by bit, she had broken herself away from the ungovernable flesh. If she could not teach it not to suffer, she could at least sit aloof and ignore the turmoil. Even alone in the dark, except on rare nights of self-indulgence, she kept up the polite and friendly air with which she met the world. To-night a sudden light at any moment would have found her in the attitude of a lady composed for sleep, and if her blue eyes looked startlingly black, her tranquil eyebrows would have offered a flat contradiction. The tempestuous heart of her girlhood would have broken to pieces if she had not taken command. She had done her hard task so well that Hugh could tell her she had no heart—that she was as impersonal as nature. And perhaps it was nearly true, now; perhaps these secret disturbances were only the lingering reverberations of the former storms. Perhaps this anguish of suspense that she was so strongly ignoring was nothing more than an old habit. She admitted the possibility quite coolly, then had to catch back her arms, which had flung themselves out into the darkness, straining to reach her child.

"But I have not found Mary," she reminded herself reasonably. "It is never true. I used to go through all this at every fresh clue—but the child was never Mary. It doesn't come true. I quite recognize that. And now I am going to sleep." But she was not. There were things that even her will could not accomplish.

The reluctant winter dawn came at last, and finally Hannah with a breakfast tray. She found Mrs. Jaffrey dressed for the street, but Hannah had one of her grievances, and the grievance code did not permit her to look surprised. She would not even answer the automatic, "Good morning, Hannah," though a smile came with it, automatic, too, perhaps, but touchingly well meaning and weary. Marise was only vaguely aware of the chill, but as she set out she felt an exhausted need of a kind voice and a steadying hand.

"One does have to do a good many hard things by one's self," she admitted. It was as near as she ever came to a complaint.

The crisp morning air felt good on her hot forehead and heavy lids, and Marise walked across the park, traversing various morning streams of people, all pouring down into the city. They looked at her, even turning back for a second look. She was well dressed, but not more so than hundreds they would pass, and her face, colorless but for the sudden blue of her eyes, was not what they would have called beautiful. And yet they felt her important, "somebody." The graceful bearing that had never cost her a thought, her perfect unawareness of them, the subtle marks of an intense experience—no doubt there were many contributing causes, but above all, clear and distinguished, shone out the fact that she was a lady. And though most of those who passed would have protested furiously if they or theirs had been denied that title, they must have admitted that she wore it with a difference. Even here she was set apart—she who believed so hotly that she had passed all the barriers that separate the few from the multitude.

She was unconscious of them, and yet, in a way, she was thinking of them, thinking of other lives in contrast to her own. They wanted so many things—sport, amusement, travel, art, things she had gone after as keenly as any one until sixteen years ago. She had once been a very good tennis player, but since that black day the thought of a racket in her hand had been inconceivable. She had danced miles in her youth, but when the new steps had drawn all the women of her generation back into the ballrooms, she had looked on in puzzled wonder with a patient "What for? Why do you want to do it?" when their enthusiasm tried to draw her in. She had seldom paused to realize what her own life had become, but the sleepless, disciplined night, which had finally succeeded in leaving her heart quite cold and dead, seemed to have illuminated her brain. She saw in the austerity of her life a new significance.

"They want all those other things because they want love," she decided. "When you put sex out of your life, put it violently before its natural end, you put other things out with it. Little desires, appeals to the senses. The body, in fact. I have been disembodied. It must show, sooner or later. Shall I seem spiritual, or merely bleak? I have been one-idead, of course—obsessed, as Hugh calls it. That means I have narrowed. Yes, narrowed. Oh, I have gone out into a bigger world, but I have taken one narrow path through it. And yet, if I had stayed more—human . . . well, then there would be Hugh. And that can't be. He almost pushed in, but I put him out. I don't want him now. That is over." She paused to let a couple of women on horseback trot past. They looked very gay in their boots and breeches and flying coat-skirts. They were about her own age. And she had loved riding as a girl.

"But I couldn't bother to do that," she realized. A stray line from some poem came into her head: "'I had forgotten all about the spring.' That is it," she decided, "I have forgotten the spring. And now I shall never remember it." But her heart refused to care.

The Healys lived in a model tenement, as one might have known that they would. Mary Healy's air of joyous success implied a background of modern conveniences. She would be at her office by this time, but Mrs. Healy, in a fresh and suitable morning gown, would be putting the flat in order. Marise, getting her breath outside on the landing, could hear the heavy step within, and a gigantic humming.

At her knock, the humming stopped, and there was a pause while Mrs. Healy tied on a fresh white apron. One hand was still settling its starchy exuberance when the other opened the door.

"Well, Mrs. Jaffrey!" She was heartily cordial, and bigger than ever in this crowded little room. Probably never did a small room hold so many things, every one of them exquisitely clean and perfectly in place. The lace curtains were as stiff and luminous as Mrs. Healy's apron, the Victrola and the Morris chair had a dark, polished gleam, the very buttons of the green plush sofa had been freshly brushed about, and the flock of prints, lithographs and Christmas cards that swept the bright green walls could show every one a shining morning face. No need to pull forward a chair; one was already placed in the best company position, beside a mahogany-colored table of two complete stories with several balustraded half stories in between. Mrs. Healy seated herself opposite and palpably expected something nice for Mary.

Mrs. Jaffrey had planned to approach the subject through the problem of May Iaguna, but steam pipes throbbing at her elbow gave out an overpowering heat, accompanied by a smell of frying gold paint, and her strained nerves, crying out for space and coolness, hurried her past preliminaries. Her errand had become a mere formality, to be put through as quickly as possible.

Mrs. Healy," she began, "Mary told me last night that she is not your own daughter; that she was your sister's little girl and you adopted her."

Mrs. Healy's face showed a subtle stiffening, and she straightened in her chair. "Yes, m'am," she said with a slight change of tone.

Marise knew that she ought to propitiate, ought to say something of the great love that Mary showed for her adopted mother, but the heat was making her giddy and she could not stop.

"I am so interested in Mary. Will you tell me about her own father and mother?"

Mrs. Healy folded her great arms across her chest and turned on her guest a level watchful eye.

"Her mother was my own sister, m'am. Bridget Flammer was her name before she—I never set eyes on Mary's father. He died when Mary was a year old."

Marise loosened her furs. She had lost her breath again, as she had on the stairs. "And then your sister came back to you?"

"No, m'am." The words closed like a door between them, but Marise had to push on.

"Mary said that she died in your house."

"She did. She came to visit me, and she died."

"How long was that after her husband's death?"

A hard red rose to Mrs. Healy's temples; her voice tightened ominously. "Will you tell me why you come here prying into my girl's birth? If you've anything to say against her, I'd thank you to say it out."

Marise, seeing what she had done, cried out against it. "Oh, no, no! You have quite misunderstood!" She forced herself to pour out friendliness as she did on the girls who came to tea with her. "You know how interested I am in all girls. And Mary looks so like—she has a lovely face. I simply wanted to know about her when she was a baby. She must have been very dear and very beautiful."

Mrs. Healy had softened and opened. "Ah, she was a little rose! She was over two when I first saw her, for I will confess to you, m'am, that my sister and I had been estranged for many years. And then I—well, I sought her. I put an advertisement in the papers. And four nights later I heard a wagon drive up, and I went to the door with the lamp, and there was Bridget with the little girl by the hand. I'll never forget my first sight of her—my sister dressed her very fine, and she looked up out of her lace cap so sweet and so sleepy with the journey! I've got the cap and the coat still, a little white corduroy—"

Marise had risen. "Show them to me!" she commanded, so sharply that the other rose automatically to obey. Then she stopped, sending a look of stern question at the averted face. "Show them to me!" Marise repeated.

Mrs. Healy went into the adjoining bedroom, and a drawer creaked. When she came back, her face was pale and set above the tissue-paper of a soft package. Within was a yellowing lace cap and a white corduroy coat, its silk lining starred with faded pink roses. For a blurred moment, Marise believed that this was only the eternally recurring dream, and groped blindly for some reality. Her hand tried to touch the cloak.

"Lord Christ, you're Mardie!" said a choked voice over her head. Strong arms caught her as she fell forward.

In a moment Marise was conscious again, trying to raise herself on her elbow from the sofa where she had been laid. Mrs. Healy pressed her back and bathed her forehead with shaken hands.

"I did the fair thing," she kept saying. "I did, Mrs. Jaffrey. I put the death in all the papers. I gave you every chance. I wanted the little girl fit to break my heart, but I gave you every chance I knew how. And I had an equal right. A mother's sister is as close as a father's sister. But I knew you'd loved her by the way she cried for Mardie, and—" Her voice was stricken into silence and her ministering hand fell. She shrank away. "Lord Christ!" she said again. "You lost your own child. Mrs. Jaffrey, 'twas your own child you lost."

She sank into a chair, dropping her face into her hands. Marise could wait now. She told herself, over and over, "*Mary is found,*" but her heart lay cold and dead within her. How she had dreamed of this moment! She had placed it in a thousand settings, but always her part had been ecstasy and tears and longing arms held out. Now she was glad only that she could lie down. It was all so drearily commonplace.

At last Mrs. Healy lifted her head. There were great feelings in that great body. Her face was ravaged, broken; but her iron will kept her voice strong.

"How did your child go? Mary told me there was a nurse girl went with her."

"Yes." To speak was like trying to lift an impossibly heavy weight, but Mrs. Healy wanted more, and Marise dragged at it. "Mona Molloy. We never—found her."

"What did she look like?"

The old printed description floated before Marise's eyes, but to repeat it was beyond her strength. She closed her eyes with a murmur of helplessness, but Mrs. Healy inexorably drew the facts out of her one by one. The last question came from behind a shielding hand:

"What kind of a girl was she?"

Marise felt the dread in it and tried to hasten her answer. "Good. Good and faithful. Well conducted. We traced her back for eleven years, and there was not one thing against her. She had steadily bettered herself."

"Oh, glory be to God!" Mrs. Healy rested on that for a while, took it in with heavy breaths. Then her head jerked up. "But did she steal the child?"

"Oh, no, no. She was—entrusted with her. We don't quite know. The child's father—entrusted—"

Mrs. Healy was too intent on her own part in the story to wonder. "I see it now," she said at last. "I see it all. You've been done a cruel wrong, Mrs. Jaffrey, but not by me, and not meaningly by my poor sister. I'll tell it to you from the beginning . . . That was when Bridget came straight from the ship to me. She wasn't to go out to service; we held ourselves a bit above that. The farm was doing well, and we'd planned she should look about her a while and then perhaps learn a trade, like nursing. She was ten years younger than me, and she'd been like my own child." The telling grew harder, but the unshaken voice plowed on. "She was a sweet-faced girl, seventeen, and Tim—well, my husband was a good man, in his way, but he was easy and careless, and I was hard on him. I've known that since—I was hard on him. I saw nothing, and Bridget was afraid to tell me. And then one night I stayed with a dying neighbor, and I came back just before dawn, bringing their girl with me—and Tim was coming out of—"

"Yes, I understand," said Mrs. Jaffrey, trying in pity to bridge that night. But Mrs. Healy sternly went on with it.

"No, m'am, you do not. I thought I understood, and I went into a great wrath, and I made Bridget dress and leave my house, there before the neighbor's girl. And Tim kept telling me that she was innocent, but I wouldn't hear him. And Bridget said no word, but went away down the path and out the gate with her bag in her hand, and I thought then that she was brazen, but I know now that she was proud—proud and angry and hurt past bearing. All those years she carried that hurt, and that wish to punish me—oh, I see that now, I see that now! Tim told me many times that I did Bridget wrong, and when he was dying he told me more—and then I had to believe him. He had been mad for Bridget, and perhaps he had made her love him, but she was true, and when he went in to her that night, she talked to him and sent him away. And then I drove her out, and her seventeen, and a stranger in the country."

Difficult tears forced their way through the numbness that lay on Marise like a dead weight. "How you must have suffered!" she murmured.

"Yes, m'am. I had been hard before. I had said, 'Let her go her own way, since she has chosen that way.' But after Tim's death I was changed like. What the dying tell you is not forgot. And Tim said that I had been a hard woman, even in my love—that it was a yoke, and not a crown of happiness. And then I sat alone with what he'd told me, night after night, when he was gone. The farm was a lonesome place, and the man slept in the barn, so there was none but myself in the house. Every night I sat down with it."

She forgot to go on until Marise reminded her. "And then you advertised. Where was the farm?"

"In New Jersey, about an hour and a half out on the train. I put the notice in all the city papers. It said 'Bridget Flammer—Tim is dead and your sister Norah begs you to come home.' I hadn't much hope. And what kind of a woman she'd be if she did come—I had to face that."

"I know," said Marise.

"And four nights later, like I told you—oh, I see it all. She wanted to come back like a lady, with her fine little girl by the hand. All those years she'd been brooding on it—how she'd rise in the world and make me sorry. Poor child, she was kind of innocent, for all her experience. The lie didn't come so easy when she was face to face with her old Norah. She had seen it like a stage piece—her cheeks were on fire, and she kind of swept in with her chin in the air.

"'I've just come out for a couple of days, Norah,' she says. 'I don't know how it will agree with my little girl, who's never had anything but the very best.' And she went on like that about her being a widow and well provided for, and sort of turning up her nose at everything, yet all the time uneasy and unnatural, poor child, poor child! And of course she got my back up, so I said nothing about how I'd sorrowed and changed, and pretty soon she went to her bed.

"After I'd shut the door on her, I sat down to think, and then it come over me for the first time that she hadn't a wedding ring. I'd been so taken back before, I hadn't got round to it—but there her hand was, as clear as day before me, and no ring on it at all. I rose up to go in and tell her what she was, and then I says to myself, 'Who made her that?' and I sat down again. Oh, Mrs. Jaffrey, 'twas a dark hour. And it has only just this day ended—for you tell me she was a good girl, and well conducted. Glory be to God, I didn't do that to her!" She sobbed at last, but only for a moment.

"Well, m'am, I thought it over half the night, till there was nothing but love and sorrow in my heart, and then I went in to tell her so, treading softly, not to wake the little girl. I had a candle in my hand, and I saw that her eyes were wide open.

"'Bridget,' I says, 'I've come to ask your pardon.' I think she heard me—oh, I've prayed to God that she heard me. Something looked back at me from her eyes. But she did not speak, and then I saw she was a terrible color, and I heard her hard breathing. I carried the little girl into my room, then I went out to the barn and woke up Olaf and sent him for the doctor. It was two hours before he got there, and I kept feeling that the poor child wanted to say something. She died before daybreak. . . .

"Well, I never for a minute doubted that it was Bridget's child. She'd call her mama—"

"No." Marise spoke sharply. "Momo. That was her way of saying Mona."

"To be sure, to be sure. Mona Molloy, you say it was. She must have taken the name the day I drove her out, lest the disgrace follow her. Momo. Perhaps that gave her the idea. Perhaps she started just to come as she was, and then thought of that on the train, and didn't get round to thinking of the ring. Poor soul, poor soul! And when the little thing asked for Mardie, Bridget says it was her husband's sister, that she lived with. She'd given his name as Walsh, Thomas Walsh. I put it that way in the papers, Bridget Flammer Walsh, widow of Thomas Walsh. For she had said she was a widow, and perhaps the ring could have been explained. I thought I had a right to go by her spoken word, with her dead. I put my own ring on her hand before doctor came. It was buried with her, and I bought me another when I could. I gave her back her good name in the neighborhood, and I never told my doubts to any one. They were my own."

Marise dragged herself up, her palms pressing her throbbing temples. "But why didn't we find you!" she exclaimed. "How such a search as we made—"

"But, Mrs. Jaffrey, I'd lived twenty years in that community; I had what they call a standing. Who would look in my house for a lost child? The man who drove Bridget up from the station, the doctor, Olaf—they'd all known her as a girl, eleven years before. She was Bridget Flammer to them. And then little Mary, it wasn't a week before she came down with the scarlet fever—oh, she was terrible sick, and the house was in quarantine, and though neighbors left the weekly paper for me, I didn't read it, and I talked to no one. I never rightly knew the story of your child, though I heard it spoken of now and again. Night and day I nursed the little thing, and when at last we brought her through, well and sound, she looked like another child, older and different. I knew then it would break my heart to let her go. And I never went to sleep without thinking, 'Maybe that Mardie will be out in the morning, and the child will turn to her, and I'll have to give her up.' Night and day, for years and years, the thought never wholly left me. With that fear in my heart, I made myself over, bit by bit—for I'd been a hasty woman when I was crossed. But I says, 'She's got to love me better than that Mardie.' It was never mama she cried for, but always Mardie. And when I saw how she shrank at a rough word, I never gave her another, not to this day. She's had every chance I could offer her, and when she was twelve years old, I sold the farm and moved here, that she could have high school and everything. She's been my life, Mrs. Jaffrey. And I'm dear to her—I can say that. I'm dear to her."

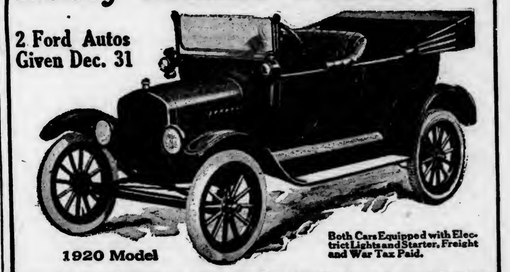
"Yes," said Marise. The issue hung silent between them until Mrs. Healy started up.

"We'd both be better for a cup of tea," she said, and went out, closing the door.

(To be continued)

Write Me Quick
Every Minute Counts—

2 Ford Autos Given Dec. 31



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December 31st I am going to give a new Ford Touring Car and a Ford Roadster to two people who are prompt and energetic in following my instructions. No matter who you are or where you live you may have an opportunity of owning one of these splendid cars by answering this ad today. I will send you full instructions telling all about it. Send no money.

Thousands of Dollars Will be Given
In Grand Prizes and Cash Rewards

$650 Ford Touring Car—1st Grand Prize.
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$420 H-D Motorcycle—3rd Grand Prize.
Cabinet Grand Phonograph—4th Grand Prize, and 21 other grand prizes such as Gold Watches, Diamond Rings, Silverware, Bicycles, etc. Thousands of dollars in cash rewards. (Prizes duplicated in case of tie.)

Every one taking an active part in this contest will be well paid in cash, whether or not he wins one of the Fords or one of the other Grand Prizes. Just your name and address with five or more faces correctly marked in the picture below, starts everything. Act quick. Mail me the coupon today sure.

Cut Out and Mail Coupon Today

Can You Find Five Faces—Get 1000 Votes

In the picture are a number of hidden faces. See how many you can find. Some are looking right at you, some turned sidewise. You will find them upside down and every way. Mark each face you find with a pencil, write your name and address plainly on the lines below, clip out this coupon and mail to me now. If you find as many as five of the hidden faces I will enter you in this contest and credit you with 1,000 votes. Send me this coupon today SURE.

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Dear Sir:—Here is my solution of the picture. If correct, enter me in your Grand Prize subscription contest with a credit of 1,000 votes. I want one of these cars—send me full particulars.

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We want an agent in every community to use and introduce these wonderful tires at our astonishingly low prices to all motor car owners.

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to a representative in each community. Write for booklet fully describing this new process and explaining our amazing introductory offer to owner agents.

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28x3	$ 6.80	34x4	$11.30
30x3	7.20	34x4½	12.95
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31x4	10.15	35x5	14.35
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33x4	10.95	37x5	14.95

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Where the Farmers are Pulling Together

(Concluded from page 278)

Community Club with an enthusiastic enrollment has already provided a meeting house, as well as successfully campaigning for a better school house in its neighborhood. The Leitersburg Grange has 200 members and the meetings are held in the town hall. The Sharpsburg Community Club has effected a marked improvement in agricultural conditions in its section, while the Washington County Dairymen's Association is working for an extension and expansion of the dairying industry. Its efforts, at present, are being centralized on the formation of a local cow testing association. Despite propitious natural advantages, dairying has been relatively neglected in Washington county, and it is the aim and purpose of the milk farmers' organization to correct this condition. The Boonsboro Community Cub, the Appalachian Fruit Growers' Association and the Eastern Fruit Growers' Association are also prosperous co-operative organizations.

The Washington County Holstein-Friesian Association, at this writing, has only 18 members, who own approximately 400 cows of the breed and who are operating for the increased popularity of the black and white cattle and the expansion of the milk-making industry. The Washington County Poultry and Pigeon Association is made up chiefly of fanciers, as well as townspeople interested in backyard poultrying. An abundance of rough mountain land, excellently adapted for sheep raising operations, and a fairly uniform sentiment opposed to the sheep-killing dog, apparently indicate mutton and wool production as a profitable system of agriculture in Washington county. The County Sheep Growers' Association is anxious for the development of the latent resources in this line, but the farmers, for the most part, have been remiss about embarking in the lamb producing business, despite that such activities offer attractive profits. From a live stock standpoint Washington county is lamentably weak, in consideration of the natural advantages which it offers, which have been capitalized in only a comparatively small number of instances by the local farmers, who are wedded to general farming and apple production.

The bonanza farmers' picnic—a get together, gala occasion, which is anticipated by all the farming families in Washington county, and which, last year, was attended by more than 8000 people directly interested in agricultural pursuits—is the big round-up event of the year, usually being preceded by six different local meetings in different sections of the county, all of which are preeminently designed for the agricultural betterment of the entire community. The picnic is the annual clearing house for the three agencies most prominent in the county—business, labor and farmers. As far as possible, the problems of the three bodies are ironed out and cleared up at the union picnic and a program of mutually beneficial activities is mapped out for the next year.

Illustrative of the countrywide benefits which have accrued in the past from this annual intermingling of labor, business men and farmers, it is noteworthy that during a farm labor crisis, Hagerstown, Md., business men took a census of their employes and ultimately located 300 men who had had farm experience. Then they distributed these employes around the county as best they could, so that the shorthanded farmers would be aided in saving their crops. The town workers remained in the country until all the grain and hay was harvested and then resumed their ordinary occupations. The kindly spirit promoted by the social intercourse of the farmer and the city folks was largely instrumental in fathering this courtesy. The old prejudices against the farmer are dying out and more intimate relationships are being established between the farming population, the storekeepers, the bankers and the professional fraternity. This is as it should be, the results being mutually satisfactory and beneficial to all these agencies.

A year or two ago the school and farm gardening activities of the Washington county youngsters, under the personal direction of Miss Sue Frick, local home demonstration agent, were pronounced the best in the state by representatives of the Maryland Agricultural College and the Federal Department of Agriculture. Miss Frick supervised gardening operations, which comprised 50 town gardens in Hagerstown farmed by the Boy Scouts and the Camp Fire Girls, as well as 300 country gardens scattered here and there and everywhere over Washington county and manned by the Junior Homemakers. In addition, she aided in the agricultural instruction of the rural school pupils. She visited five or six country schools several days in the week instructing the country children in the essentials of cookery, mending and other domestic science rudiments, in addition to spreading the lore of the hot school lunch for country kiddies.

Despite that it is difficult to gain the confidence and trust of many of the mountaineers who inhabit the rough regions of the county, Miss Frick has accomplished this end and at present has eight enthusiastic woman's clubs working in different parts of the section, these organizations meeting in the school houses or in the local community houses once a week. She reports that the service rooms of several of the community clubs which feature small libraries, and which are open all the time, are of great utility in keeping the young people off the streets and of providing them a medium for profitable amusement and recreation. Miss Frick was originally considered as an outlaw invading the sacred precinct of the rural home. After she taught the farm women how to save sugar, fats, wheat and meats, and after she instructed them in the preparation of simple and more appetizing meals, she soon won rural acclaim as an angel of mercy. Now the "open sesame" to every farm home in the county is hers for the asking. She has sponsored rural education for country housewives relative to easy methods of house cleaning, laundry work, old clothes renovation, remodelling the kitchen, labor saving devices, budget and household accounts, dietetics and the canning, preserving and saving of farm vegetables, fruits and meats. Through the medium of the Community House at Hagerstown, Md.—of which she has charge—she has also disseminated similar lore among the city housewives and has measurably improved the standard of culinary art and craft as practiced throughout Washington county.

Points on "Unfilling" the Silo

(Concluded from page 278)

not be much profit. Every effort should be made to grow all of the feed that possibly can be grown on the farms where it is fed, for it takes considerable effort to move bulky feed. In feeding silage to fattening cattle, never mix the silage with grain, for the steeers will "mess over" the silage when they are looking for the grain. Feed the silage in bunks, separately.

One of the profitable uses of silage is feeding it to chickens in the winter, for winter egg production. If the hens have plenty of green material in the winter they will make a much better egg record than if they were on dry feed.

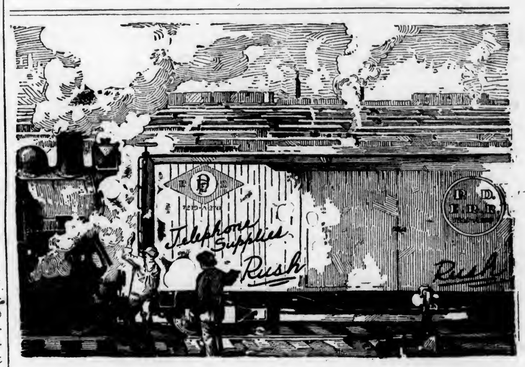
There should be a winter silo on every large enough farm, or where ten or more head of animals are kept, and if many more are handled, it will pay to build a summer silo also. Two silos would be a profitable addition to the equipment of most eastern farms.

New Jersey.

This is the season of fruit stains. Get them, if possible, while still fresh, and pour plain boiling water through them until the stain disappears. Avoid soap. There is no surer way to set the stain.

Screw top glass salad dressing jars are capital containers for spices, especially as you can see when they get low.

A plain yard without flowers is like dinner without the fixings. It suffices but does not satisfy.



Supply and Demand

This year the Bell telephone system has required 75,000,000 pounds of copper; 10,000 tons of galvanized iron and steel wire; 12,000 tons of pole line hardware; 100,000,000 pounds of lead; 1,000,000 pounds of antimony; 700,000 pounds of tin; 10,000,000 pounds of sheet and rod brass; 15,000 tons of paper for directories; more than 24,000,000 feet of lumber; 12,000,000 feet of clay conduits; 10,000,000 glass insulators. These are only some of the chief requirements, only a part of the absolute essentials.

Suppliers of every item mentioned, as well as of scores of other items, have been compelled to withdraw promises of delivery, reject orders, refuse contracts and even shut down plants. The reasons are that they have been unable to secure materials for manufacture, fuel for power, or cars for shipments.

During the period in which the demand for new telephones has been greater than ever before, supplies have been more severely curtailed than at any time in the history of the Bell System. Special representatives have scoured the country; visiting mines, factories, laboratories, shipping points; and rushing goods forward.

The impressive conclusion is that, in the face of such conditions, the Bell System has actually gained on demand, and has exceeded all previous records putting in new telephones.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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Farm Happenings

AS TOLD BY THE BOSS.

Several small fields have been planted and seeded to rye to supply late fall and early spring pasture for the young pigs and brood sows. Rye does not make the best kind of swine pasture, but seems to be the most satisfactory for late fall and early spring.

The first bunch of market pigs will be ready about the first week in October. The pigs are the oldest and largest of the spring crop. They were forced for market to get them ready at a time when handy weight hogs are scarce.

Two 15-year-old cows and our 4-year-old heifer that failed to breed, have recently been sold to the butcher. The old cows were sold in order to realize butchers' price for them, and the heifer was not paying for her feed. Old cows and heifers that fail to breed should always be culled from the herd each year.

All the silos have been overhauled and will be filled as soon as the corn is matured. We plan to fill all the silos on the place, and want the corn matured when it goes in, as it makes better feed than when made from immature corn.

We have a 6-acre tract of corn that was planted for "hogging down." The hogs will be turned into the field just as soon as the corn is matured. All they will get in addition to the corn is a little water and tankage.

Most of the brood sows that will farrow this fall were bred to farrow during the latter part of August and during the early part of September. These small pigs are all getting a good start during warm weather and will have quite an advantage over late farrowed pigs when cold weather sets in.

The breeding rams have been turned with the flock so as to breed the ewes for February and March lambing. The flock is divided with the number of ewes to be bred to one ram in one group. The ram has been smeared on the breast with lamp black and oil in order to check the ewes when bred.

We have been feeding some of the pure-bred calves some grain while on pasture this summer. They have been doing so well that they have more than paid for the additional expense incurred.

The barns and sheds have been overhauled at odd times during the summer when it was too wet to work on the farm. This will save time when it becomes necessary to bring the live stock in for the winter. A good coat of whitewash, together with a good cleaning, improves the appearance of the place. Minor repairs have also been taken care of and will keep the building from depreciating so rapidly.

Ten 10,000-pound cows will produce as much milk as twenty 5,000-pound cows; it takes only one-half as much time to feed five cows as ten; besides, one can milk ten cows, while it takes two to milk twenty.

Pays to Feed Pigs Well

MARTIN GLENN.

That it pays to feed pigs well is shown by the following piece of work which was called to my attention not long ago:

Five winter pigs, born in January, were kept under close observation for 284 days. They were weaned when eight weeks old, and at that time weighed 35 pounds each. All were from the same litter, were uniform in quality, size and vigor. All were gilts.

Two of the pigs were separated from the lot when about three months old, and were fed like most of the pigs in the locality; that is, they received only ordinary care. The other three were cared for in the most approved way; they were fed on rolled barley and corn until July 15th, then on barley and garbage. All five gilts were weighed October 21st, when they were 284 days old. The following table shows the difference in weights:

Pig No.	Owner	Method of Feeding	Weight
1	A	Ordinary	105 lbs.
2	A	Ordinary	145 lbs.
3	B	Good	295 lbs.
4	B	Good	315 lbs.
5	B	Good	303 lbs.

The combined weight of the two gilts owned by A was 45 pounds less than the lightest one owned by B. The average weight of gilts owned by A was 125 pounds, and those owned by B, 304.3 pounds. There is no doubt that all would have weighed about the same as the well fed pigs with the same kind of care, for they seemed to be alike in every respect when weaned.

The gilts owned by A gained only one-third to one-half as much as those owned by B. They would have developed to make larger and more profitable hogs if they had been fed better. No kind of swine will do well unless well fed. There must be plenty of range, pasture, water and good muscle building and bone building feed for growing pigs. Corn and tankage in self feeders, and plenty of blue grass or alfalfa pasture make a good combination for shoates that are to be ready for the fall market. *Pennsylvania.*

Suggestions for Silo Filling

It is important to fill the silo when the corn is exactly at the right state of maturity, that is, when the grain is in the dent and glazed, but can still be broken with the thumb nail. Under average conditions, the two bottom leaves will be turning brown and the shucks will be turning yellow at the ends. There is more danger of putting the silage in too dry than too moist. With a stave silo the hoops should be tightened up so as to exclude the air, and generally loosened a little after the silage swells the staves.

The corn should not be cut down too far ahead or it will dry out. It will take at least six teams to keep the average silo-cutter busy. The silage should be well tramped in order to exclude the air. It should be kept higher at the walls than in the center. At least two men in the silo are necessary when a distributor is not used. It is advisable to use concrete tampers to pack the silage. This prevents moulds from developing. The silage should be cut into pieces ½ to ¾ inch long to make it pack well and save waste in feeding. This takes more power, but it is worth it.

The silage should feel wet after it is put into the silo. If corn is very mature when cut and is, therefore, dry, add water. A small stream may be run into the blower from a barrel or tank. The blower should be run a few minutes each morning to clear out the air before anyone enters the silo.

Shock corn may be put into the silo if water is added at the rate of one pound of water for each pound of shock corn. It may be advisable, under certain conditions, if the high price of corn continues, to shuck out the corn and put the stalks into the silo. There is no objection to beginning to feed as soon as the silo is filled. This prevents waste through spoilage on top.

No definite cost can be given for silo filling, as it depends upon variable factors, such as the distance from the field to the silo, weather conditions, the efficiency of the machinery and the men. The cost will be somewhere between $1 and $2 per ton. Probably $1.25 would be a fair average.

Better Bulls and Boars

(Concluded from page 277)

offers one of the surest and safest ways. Few people can sell the stock they have and buy better, as they would trade a new machine for an old one, even if they were certain the new would be an improvement, but nobody is so poor he cannot buy improved sires. Indeed, the poorer a herd and its owner, the greater the need for one pure-bred, and a man more than fools himself when he contends he is not rich enough to own a high-class sire.

In case there are still some "doubting Thomases" who question whether a good herd can be produced from a foundation of common cows by the use of a pure-bred sire, the good work of the Iowa Experiment Station along this line may again be cited. Starting with common scrub cows, for ten years the station kept careful records of just what could be done along this line by proper care. In the case of the pure-bred Holstein-Friesian bull (and these are the cattle most prevalent in Chester county) the results showed that all the first generation heifers out of the scrub cows gave an average of 90 per cent. increase in amount of milk and 59 per cent. increase in amount of butter-fat over their mothers. Then on top of this wonderful increase it was found the daughters milked 15 per cent. larger than their dams, and, of course had more of the physique and conformation of a real cow. When it came to the second generation the results were still more marked, as the Holstein grades averaged 194 per cent. increase in milk and 138 per cent. increase in butter-fat yield over their scrub grandams. This is scientific proof enough for any man that it pays to grade up, but if he is still unconvinced let him mingle a while among a group of live stock men at the fairs and see what they have to say about the ability of the right kind of a bull to make money for its owner.

Great predictions were made at the big picnic as to what Chester county live stock will be at the end of five years if present plans carry. The possibilities are great and the men now in back of the movement are in position to see things through to the end. There is need of a great recognized eastern live stock breeding county such as now flourish in some of the western states, and breeders in general will look on this experiment with interest.

Pennsylvania.

It has been settled. She's a milk cow and not a milch cow. The federal department of agriculture has so declared.

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The Practical Farmer

PUBLISHED CONTINUOUSLY SINCE 1855

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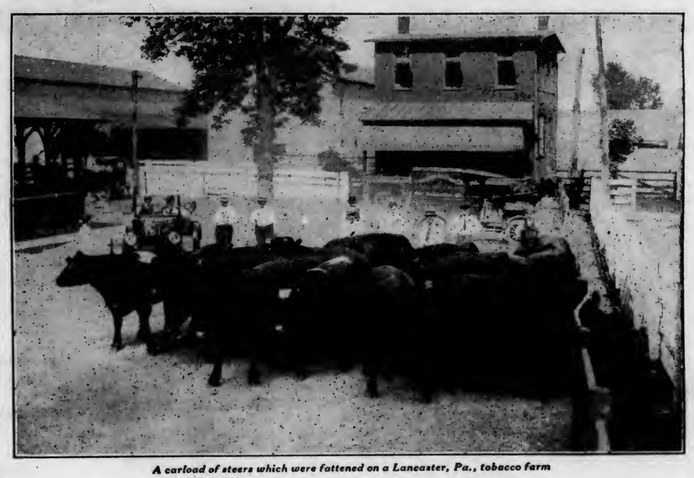
An Eden of Agricultural Affluence

By JOHN DAY

EVERYBODY calls him "Dutch" Bucher, and the farmer in Lancaster county (Pennsylvania) who does not know him has not yet established permanent residence in that region of agricultural prosperity where Dunkards, Mennonites and Amish people ride in Packards and luxurious limousines as a direct result of the farming prosperity of their section. Bucher is the county agent, and I went to see him and to travel about with him for a couple of days, as I was informed that I could learn more about the locality and its methods of farming in that way than I could in any other.

Next to the President of the United States, I believe Bucher is the busiest man in the country, if his daily activities are to be judged by the time that I spent with him. An automobile is not fast enough, and it will not go every place under the sun or stars, so Bucher uses a motorcycle with a side car attachment as the means of locomotion. He is agricultural agent for one of the richest agricultural counties in the United States, and probably the wealthiest locality of its kind in the Eastern States. Nine of the country banks in Lancaster county have total assets of more than $12,000,000. All this affluence results directly from the raising of tobacco, the prize money crop of the section, and the avocational production of beef. Lancaster is the oldest cattle feeding locality in the country, beef production having started shortly after the termination of the Revolutionary War. Originally grass fed cattle were trailed cross country from the grazing lands of Ohio, Illinois and West Virginia, and on arriving at Lancaster county the animals were finished for market according to the stall system of dry fed beef production, which is prevalent in that country. When fat, the cattle were marketed at Philadelphia, Baltimore and Jersey City during the early days of the industry, while, of late, the fancy beeves have, for the most part, been consigned to Jersey City. The run is on at its peak during the period from early April until mid-July. At this season the Pennsylvania cattle are more popular with the New York trade than are the western cattle. In round numbers, between 75,000 and 90,000 steers are annually primed for the butcher's blocks in the neighborhood of Lancaster.

Mr. Bucher took me to see such prominent farmers and feeders as Harry Graff, J. M. Hoffman, R. H. Brubaker, J. A. Herr, John Kendig, Ferris Baker, Christopher Habbaker and Levi Brubaker—all of them solid, substantial cattle feeders and tobacco raisers who own farms that are the essence of progressiveness, with their modern buildings, approved conveniences, fertile fields geared perpetually for bumper crop production, and their carefully selected feeder cattle which are picked according to uniformity of type, size, color, age, condition and breeding, so that when the animals are in market bloom they will command the maximum prices on account of this evenness and similarity.



A carload of steers which were fattened on a Lancaster, Pa., tobacco farm

I learned first-handed that cattle feeding has been developed in Lancaster county on its present large scale in order that the by-product, fertilizer, might be used for maintaining the plant food resources in the hard-worked tobacco fields up to snuff. Clover and alfalfa also are raised in the rotation to furnish feed for the work animals, beeves and dairy cattle which are maintained, and also to aid in keeping the soil in the pink of productive condition. Lime is used when needed, although most of the soils are of limestone origin and do not require much attention of this sort.

The feeding cattle are introduced during the late fall each year when the corn and tobacco crops have been harvested and housed. In the main, the farmers purchase good quality steers, which range about 850 to 1000 pounds in weight. Formerly the feeders came chiefly from southwestern Virginia, Tennessee and North Carolina, but of late years the stockmen have been showing a preference for western, northwestern and Canadian steers. The southern cattle are more difficult to acclimate and do not make as creditable feed-lot performances as do their northern mates. During the months of October and November it is not uncommon for 25,000 to 50,000 steers to pass through the Lancaster market and find ultimate disposition in the feed lots of the tobacco croppers.

Dependent on the size of their tobacco crop and the extent of their farms, the Lancasterites feed anywhere from 6 to 10 head of cattle up to two or three carloads. However, the project is chiefly that of small feeders who fatten cattle in less than carload quantities. Nearly all of the cattle are purchased at the local stock yards and generally are sold to the same dealers at stipulated contract prices, either in advance of delivery when fat or else on the basis of prices prevalent at that time.

The old-fashioned methods of producing beef on the stall system from the feeding of corn and cob meal, ear corn, fodder and hay are largely giving way to the more modern methods of grooming the cattle for market on rations which emphasize the use of ensilage and the supplementary utilization of cotton seed meal. During the last decade approximately 600 silos have been erected in Lancaster county, and the farmers claim that they are now making porterhouse steaks at less cost and trouble

than heretofore. And with the silos have come the tractors, as, to date, there are in excess of 175 of these steel steeds in use on the tobacco farms.

Harry Graff and Joe Weaver were among the first farmers to introduce a new system of cattle feeding in Lancaster county. It features the use of a commercial feed mixing and grinding machine which is operated by a gas or steam engine. The outfit converts corn fodder, straw, hay, cotton seed meal, corn, oats, barley, other cereals and molasses into a finely ground, correctly balanced mixture which is highly palatable and greatly relished by the cattle. The custom is to feed the animals this mash two to three times daily, according to their size, capacity and appetite. Messrs. Graff and Weaver report that the use of the prepared feed reduces their beef production costs between 25 and 30 per cent. over the expenses involved in making beef by the dry feeding method. The cattle fatten more rapidly and at market time show sleeker coats, more uniform finish and superior quality than do the dry-fed steers. Many other farmers are purchasing these feed mixing outfits (which cost from $800 to $1500) cooperatively, and are realizing the benefits of the new feeding system, which is of outstanding efficiency, particularly where supplementary silage is also fed. Joe Weaver told me that recently he fattened 65 steers on his 30-acre farm, for the most part on home-grown feed, as a result of following this method of beef production.

John Kendig is one of the most prosperous of the old-style feeders. He crops his 102-acre farm in this way: Wheat, 33 acres; corn, 28 acres; timothy and clover, 18 acres; tobacco, 12 acres; pastures, lots and garden, 11 acres. He purchases his steers—usually 20 to 25 head—about the middle of October, and to begin with, feeds the cattle ear corn; bran and dairy feed, the cattle then weighing 950 to 1000 pounds apiece. By the first of the year he has the cattle on full feed, when they receive 10 to 12 quarts daily of a mixture of corn and cob meal, cotton seed meal, in addition to plenty of hay and fodder. The cattle are fed three times daily. The cattle generally are marketed about the middle of June, weighing about 1450 pounds an animal. Mr. Kendig is not satisfied unless his steers make a monthly gain of 58 to 60 pounds a head. In starting his cattle on feed, Mr. Kendig mixes up a condition combination of 25 pounds of sulphur, 25 pounds of Epsom salts and 25 pounds of well sifted wood ashes, which he feeds to the steers in small amounts with bran and mill feed for a period of six weeks, in order to get the animals in the best condition for the heavy subsequent feeding operations.

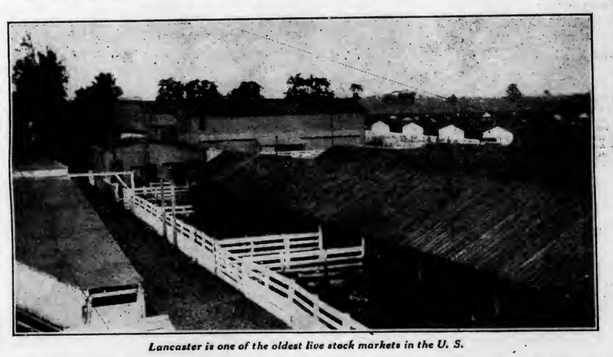
On the average, the Lancaster cattle are marketed from the latter part of March to the first of July. Only about 10 per cent. of the offerings grade as prime, fancy steers, which weigh around 1500 pounds. About 30 per cent. of the cattle are common steers, 35 per cent. are common to good steers and 25 per cent. are good steers. On the average, the cattle gain between 325 and 350 pounds an animal during their six to eight months residence in these Pennsylvania feed lots. On the basis of an output of 85,000 fat cattle, and reckoning that the steers make an average gain of 335 pounds an animal, Lancaster neighborhood is annually responsible for the production of 28,475,000 pounds of beef. According to the estimates of agricultural experts, these cattle, during the conditioning period when they remain in Lancaster feed lots, produce in the neighborhood of 600,000 tons of valuable manure, which plays an important part in the fertilization of the tobacco crop which is raised the following season. That's good agricultural practice, and worth making a note of.

Using Rye on Your Farm?

A. E. GRANTHAM.

THIS is the season to sow rye, and it is the object of this little discussion to review some of the many uses to which rye may be put. In the first place, as a matter of soil conservation, no land should be without a cover crop during the winter. A growing crop like rye takes up and holds the available or soluble plant food which has been released during the late summer and early fall. All tilled land, such as is in corn, potatoes, etc., has produced in it in excess of the requirements of the crop certain quantities of nitrates which are easily leached away by the fall and winter rains. A crop like rye following the corn or potatoes will absorb the greater part of these nitrates and prevent their waste. The more intensively the soil is tilled and fertilized the greater the loss will be, because such conditions favor the abundant production of nitrates. Therefore it is wise economy to provide against such loss by seeding to rye. Someone asks, why should this crop be rye? The principal reason is this: Rye may be seeded later than any other cover crop, and it does not require as careful soil preparation. While it is better to sow a legume, such as crimson clover or vetch, very often it is so late after corn or potatoes are removed that these legumes cannot be seeded with success.

Another reason for using rye is to prevent the washing of rolling or hilly land and to prevent the blowing of sandy soils. A growing crop of rye will assist very materially in preventing the gullying or surface washing of hillside fields. Rye makes a better root growth than wheat or other small grain crop, hence its adaptability for this purpose.



Lancaster is one of the oldest live stock markets in the U. S.

It is not unusual to have farmers ask in the early spring what crop they might sow to provide early pasture or up to the time the permanent pastures are ready. One of the best crops for this purpose is rye. It makes some growth during the mild days of winter and comes on very rapidly during the early spring. Winter rye makes a very valuable pasturage for brood sows and sheep. As the rye develops more size in the spring any kind of stock, especially dairy cattle, do well on it. Dairymen have told me that the flow of milk was greatly increased by turning the cows into rye, even when the animals were already getting a high-class ration. The value of rye for this purpose should not be overlooked by the farmer who wishes to keep his stock in good condition and at the same time provide for a more elastic system of early pasture crops.

From the soil improvement standpoint rye should be given careful consideration. In view of the fact that the crop may be seeded later in the fall than any other catch crop, it is of decided value as a source of green manure to plow under in the spring. All of our soils are becoming depleted of organic matter and some effort should be made every year to turn under as much vegetable matter as possible. Rye has a bad reputation among some farmers as a soil improvement crop, because it has not been turned under at the proper time. Care should be taken to plow under the rye before it begins to head out. Of course, the use of rye for soil improvement does not prevent its use for pasturing. In fact, it is more economical to use it for the two purposes at the same time.

Rye may be seeded any time from now until the tenth of November as far north as the latitude of Philadelphia. As soon as the corn is removed, if the

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A Thought to the Wind

FREDERICK C. RUSSELL.

WHEN planning his farm, the ruralist is usually particular to see that he has good water supply and fertile soil. He will also try to buy or build in an accessible locality, where he will have good roads to his markets, telephone connections and possibly electric current for lighting and power. He will take care to see that he has adequate drainage and sanitation. Beyond that he is usually not so particular. And it is doubtful whether the question of the wind ever comes up for discussion.

Yet the wind is a decidedly important matter for the farmer who does not care to take a chance on the loss of his property. A great many—too many, in fact—farm houses are destroyed by fire simply because the owners have overlooked a very vital requirement in their building program. A barn or a garage is always a greater fire risk than a dwelling, and, as a consequence, should be situated in respect to the dwelling so as not to endanger it. The respective locations of the barn and dwelling must, therefore, be determined before the farmer starts to build. His guide in this work should be the wind.

When the city man decides to go "back to the farm" he is pretty likely to place the barn or the garage, or both, in exactly the right place. But this is neither because he takes the fire hazard into consideration nor because he is guided by luck. He is thinking of his health, which in all probability is one of the main reasons why he is giving up city life. To think of his health he is obliged to think of many things which he has not been able to have in the congested city. He wants the purest water to drink, of course. And the soil must be rich enough, and the climate favorable enough, so that his farm will be a paying proposition. His buildings must be of lasting construction; and with the thought of durability there must be the touch of the artistic, a matter which is too frequently overlooked by the born and bred ruralist. But paramount in his mind is the thought of the good old country air. He is aware that this is largely a matter of the wind.

But in considering the wind from the health standpoint the newcomer to rural ranks unconsciously protects the main part of his property from loss by fire. There is no need, however, to approach the subject so indirectly. The farmer will admit that safety from fire is quite as important as factors contributing to good health, at times more so. It is better to consider the fire hazard first. Fortunately, as I will presently show, in solving the fire problem one automatically solves the health problem at the same time. This greatly simplifies matters.

Before building his new farm the ruralist should recall that the purest and best air always blows from the west, particularly the northwest. There should, then, be nothing to the west of the house but the open country. Of course, if one is cramped for room, plans cannot be so ideal, but the farmer can at least arrange to have his fields, meadows or

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Statement of the ownership, management, etc., required by the Act of Congress of August 24, 1912, of The Practical Farmer, published semi-monthly at Philadelphia, Pa., for October 1st, 1920.

State of Pennsylvania... } ss.
County of Philadelphia }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Edward T. Walker, who having been duly sworn according to law, deposes and says that he is the publisher of the Practical Farmer and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

	Name of	Post office address
Publisher,	EDWARD T. WALKER	121 N. 7th St., Phila., Pa.
Managing Editor,	EDWARD T. WALKER	121 N. 7th St., Phila., Pa.
Business Manager,	CHARLES T. WALKER	121 N. 7th St., Phila., Pa.

2. That the owners are: (Name and address of corporation, and the names and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.)

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(Signed) EDWARD T. WALKER, Publisher.

Sworn to and subscribed before me this 29th day of September, 1920.
(SEAL) (Signed) MARY B. HALPIN, Notary Public.
Commission expires February 9, 1923.

OCTOBER 15, 1920

I WANT to pass on to Practical Farmer readers an extract from a letter from a poor Kentucky farmer that came to my attention a few days ago. Old in experience and years, weakened by hard knocks as well as multiplying days, this veteran of the plow wrote:

"Whenever I go to town my pigs are sure to get out and devour my neighbors' chickens. If pigs don't get out the cow or horse will and there is trouble in the land when I get back. There is no help left in this country and this past winter is the first time I have felt like giving up the ship. Have been utterly discouraged of late, and while in this frame of mind something said to me, 'Read the Bible.' Did so. Been doing so every night since. Feel like a changed being. Sleep better, work better, take a more cheerful view of things. The more I read it the better I feel. Not exaggerating, simply telling you my experience."

Does this good brother's trouble and his readiness to "give up the ship" sound natural to any of you who read this? It has a familiar sound to me, only my troubles weren't pigs and cows and horses—and maybe yours weren't either, but they were real troubles just the same—*our* troubles! But the rest of his experience is just like mine—I found help the same place he did—I've slept better, worked better, taken a more cheerful view of things—and "the more I read it the better I felt!" And I have lots of business and professional friends who have experienced the same wonderful help in their times of trouble—I'm sure some of you have, too.

But some of you haven't. Some of you have had—are having—"pecks of trouble," but you've never thought of turning to the good old Book for help and you've missed the biggest thing life holds for you—the realization that you have a Saviour, willing to take all your troubles on His shoulders, and a Father rich enough and strong enough to give you anything that's for your good, and anxious to do it if you'll only turn to Him. If brother farmers, business men and professional men have all found peace and help and happiness in the good old Book—the Word of God—why don't you try it?

EDWARD T. WALKER.

The Fairs and the Youngsters

THE most encouraging and progressive feature of many of our state and county fairs this season was the attention given to exhibits made by farm boys and girls individually and in their clubs. There is hope for the fair which featured these exhibits and in their increasing number we see a new hope for the future of agriculture throughout our country. For nothing awakens a real and lively interest in a youngster's mind so quickly and so surely as healthy competition with other youngsters; our best school teachers realize this and achieve their successes in pumping knowledge into the youthful brain by putting the boys' and girls' ability to absorb information against that of their fellows.

It is on this same principle that the pig, calf, corn and other boys' and girls' clubs have been turning out capable farmers. And in this work of making farmers the annual fair should occupy the same position as the school exhibition does in school-room education—give the young people a chance to show what they have accomplished and to compare achievement with achievement. When this feature is developed to its fullest extent we won't hear so much of the eagerness of farm boys and girls to live in the cities, for where their treasures are there will be their hearts also.

The greatest need of our fairs in this direction is adequate and permanent housing for these boys' and girls' exhibits. The fair associations that promptly realize this need and meet it are assured an increased popularity and a greater measure of success in the work they are undertaking for the good of agriculture.

Your Duty on November 2d

WITH the best of intentions to go to the polls on election day and vote it is only too easy to let some circumstance at the last minute keep us away—particularly if it is some distance to go, and we have the idea that "they don't need my vote," or "my vote wouldn't count anyway."

We believe that it is the plain, straight duty—not merely the right—of all citizens to cast their votes and to go to a whole lot of trouble to do it, too, if necessary. It is a duty a man or woman owes alike to self, to country and to party or cause, and nothing which can possibly be avoided should interfere. If it is true that each citizen has an equal share in our government in that one vote counts as much as another, it is also true that the responsibility is equal. Why let your neighbors decide your issues for you when it is your right and your duty to have a voice in your own behalf?

Furthermore, your vote counts more than you think it does, no matter whether the party you favor is apparently a sure winner or a hopeless loser. There are few elections so certain that just one more or one less vote in each election district throughout the state would not completely change the result.

We remember a Presidential election a number of years ago when the result was pretty generally considered a foregone conclusion, but which went the other way because New York State unexpectedly gave the other candidate a plurality of a few hundred votes. Had any one of a dozen counties in that state polled its usual number of votes history would have been changed. A rain which started during the day kept thousands of voters away from the polls in those counties which were largely rural and were overwhelmingly in favor of the candidate who lost. These voters thought they were not needed, and so stayed home. Our political history abounds in similar instances of where the stay-at-home vote upset all calculations.

We are on the eve of an election of far-reaching importance. Great questions are to be decided, which will affect our future if not our immediate welfare. No matter how you feel about these matters it is your duty to go to the polls on November 2nd and cast your vote for the party or candidate whose principles most nearly coincide with your own. Then when the votes are counted the result will truly be the decision of a majority of all our people.

Men! Women! Do your duty on November 2nd.

The Total Number of Farms

CENSUS figures which have just been announced show that the total number of farms in the United States in 1920 does not differ greatly from the number in 1910. There has been a slight increase—one and a half per cent.—the total now being 6,459,998 as against 6,361,502 ten years ago.

As might be expected, there is a slight decrease in most of the states in the East and Middle West, with an increase in the Western and Southern States, which are becoming more thickly settled.

Pennsylvania shows a decrease of seven and eight-tenths per cent. (the figures being 202,256 now, as against 219,295 in 1910) and this may be considered fairly typical of this section of the country. This does not mean any decrease in the value and extent of our agriculture, however. In fact, the situation is quite the reverse, as crop reports from time to time show. The figures showing the total number of acres in farms are not available yet, but modern practice naturally means giving up such land as is not best adapted to farming purposes and concentrating all attention on the land which may be cultivated intensively with good profit.

Bulletin Helps for Farmers

"Essentials of Animal Breeding," a new Farmers' Bulletin written in simple language for the person who raises farm animals, tells the basic facts about heredity and how live stock improvement may be brought about, and should be in the libraries of farmers generally. Under the title "Principles of Live Stock Breeding" the Department of Agriculture is preparing a more detailed and technical bulletin for experienced breeders and seekers after fuller information along this line.

Here is a new Farmers' Bulletin (No. 1116) designed for the use of beginners in poultry raising, and especially for members of boys' and girls' poultry clubs. It concerns "The Selection and Care of Poultry Breeding Stock" and its study should lead to the production of an ample supply of good eggs for hatching.

Farmers located south of the center of Pennsylvania will find interesting the new Farmers' Bulletin (No. 1143), "Lespedeza as a Forage Crop." Lespedeza, or Japan clover, is particularly recommended in this section for permanent pastures in connection with Bermuda and carpet grasses.

Any of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

Uncle Sam's Soil Doctor

W. J. MADDOX.

Some years ago a group of highly respected men in the United States predicted dire things concerning the soil of this country—that before long it would lose its power to produce crops and that the then fertile fields would be barren wastes. It was a very alarming and gloomy picture and caused quite a deal of discussion. The prophets called upon a certain scientist of the United States Department of Agriculture, an expert on soils, to write a paper for them on the subject, expecting, of course, that he would back up their theory.

This man was Milton Whitney, now Chief of the Bureau of Soils. Now Mr. Whitney had some ideas of his own on the matter. He prepared the paper, but he took issue with the gentlemen in question, and pronounced a theory directly opposed to theirs. His doctrine was summed up thus:

"The soil is the one indestructible, immutable asset that the nation possesses. It is the one resource that cannot be exhausted; that cannot be used up. It may be impaired by abuse, but never destroyed."

This does not mean, says Mr. Whitney, that there have not been individual failures through poor management of the soil by individuals and communities. There are many failures in all industrial and commercial life, and the farmer is not exempt from similar limitation of capacity necessary for success.

Researches of the bureau have shown that the soil is a living thing, in exactly the same way that an animal or a plant is a living thing—it breathes; it has a circulatory system; it has a solution carrying food material similar to the blood of animals; it is the home of the same kind of bacteria, chemical substances and processes as play a part in the animal growth and maintenance; it digests organic matter disposing of the remains of animals and plants through much the same process and with the formation of similar organic products as animals.

The soil, he has found, is subject to fatigue, and in extreme cases to suspension of all useful activities, according to the treatment it receives and the conditions under which it exists. The soil, therefore, must be properly exercised by plowing and cultivation; it must be properly fed by plants, the remains of which it can digest, and by a rotation of plants, just as the dairyman finds it necessary to vary the feed of his cows to keep them in a high state of production.

Mr. Whitney, therefore, stands in the place of a physician to the soil. As a physician advises a change of occupation or a change of diet for certain human ailments and uses drugs to aid in his treatment, so Whitney diagnoses the disorders of soils and recommends a change of method, or a change of cropping system and the intelligent use of commercial fertilizers for restoring the soil to a healthy condition of production.

To make this service of nation-wide scope and bring it directly to every farmer in the United States is Mr. Whitney's problem. Under his direction his field specialists are conducting one of the largest pieces of work of the kind ever undertaken in any country. This is the soil survey, which when completed will give a detailed account of the physical and chemical makeup of every square mile of soil in the United States. The information thus obtained is of value in many ways, particularly to the farmer. It forms a basis for determining how to treat soil and cultivate it to the best purpose.

As to others to whom the information is of great value: The prospective farm purchaser is enabled to find the proper soil for his purposes and has expert judgment as to the nature of the soil in any one locality and the farming it is best suited for. The survey furnishes the basis for the experimental field work of the state experiment stations, and also gives the stations the necessary knowledge for advising farmers in different parts of their states as to cropping systems and cultural methods. The railways use the soil maps in their development work. Road engineers and sanitary engineers use them. Forestry men use them as a basis of sales of land after the timber has been cut. They are important to the Reclamation Service for its development work, particularly for providing efficient drainage, and for the prevention of the rise of alkali where the possibility of such a danger is shown.

The Post Office Department and the Department of Justice use the maps for running down fraudulent land sales. During the war, the War College and other branches of the War Department used them in the selection of camp sites, for military maneuvers and for other strategic purposes. Investment companies are using the maps in calculating risks involving land values, agricultural occupation, and health conditions.

Mr. Whitney has often been asked to place a monetary value upon the soil survey.

"It is impossible," he declares, "to place a money value on information of this kind, but if I had a farm of 100 acres I should be willing to pay a man who has the experience in soils, such as our soil-survey men have, $100 to visit my farm to tell me what the soils are, what they correspond to in other localities, and what the general experience of farmers and scientific men have developed as to the best cropping system, the best treatment and the best line of development of the soils on my particular farm. It is easily worth a dollar an acre."

That is, if all the farmers in the United States believed in the value of soil surveys as Milton Whitney believes in them—he ought to know—we would have—at a dollar an acre—a nice little value of $640,000,000 on the surveys of the 1,000,000 square miles already studied.

Of course, though, no charge is made by the bureau for its advice to farmers or anyone else to whom its knowledge or information may be of use. On the other hand, it is anxious to be of as wide service as possible. The 1,000,000 square miles already surveyed represent approximately one-third of the United States. The bureau has 82 men engaged in its field work, and 91 stationed at the main office at Washington, D. C.

Since his appointment as chief of the bureau, Mr. Whitney has been closely associated with all its achievements. The study of soils is not only a profession with him, but a hobby. At his home in Washington he has a private laboratory where he delights to spend his odd moments conducting experiments.

Mr. Whitney is a native of Maryland, having been born in Baltimore, August 2, 1860. He was appointed assistant chemist at the Connecticut Agricultural Experiment Station in 1883, and served as superintendent of the Experiment Farm, North Carolina Experiment Station, from 1886 to 1888. In 1891 he was appointed soil physicist of the Maryland Experiment Station, where he remained until selected to head the Bureau of Soils in 1894.

The Bureau of Soils, it should be remembered, is only one of the seventeen bureaus that go to make up the United States Department of Agriculture, all working together, each using information furnished by the others in planning and suggesting better methods in agriculture for the benefit of the farmers and also for the benefit of every other citizen of the United States.

Watch the Fruit Tree Agent

EARL ROGERS.

When winter comes we farmers can expect to have regular visits from agents of every sort. Among them is the fruit tree agent. There are all kinds of them, but this is one of the kinds that either gives such satisfactory results in the years to come or gives us such a black eye in ten years that it pays to have a pretty good idea of the quality of the man who sells to you. Let me tell you a few things about fruit tree men, that may save you many dollars, and what is far more important, save the years wasted in growing a worthless tree.

Agents will come to you with stories of wonderful trees. What they have to sell is different from any other trees. Their nursery is the only one that can supply such trees at any price, and their price is about that—any price. I know of agents selling raspberry plants that won't freeze down in winter. Some are hardier than others, of course, but I have yet to see one that won't be affected by some excessive cold winter. Don't be fooled into paying twice a regular price for something of this sort.

Some agents have been offering trees that are guaranteed to be free from scale forever. It is certainly true that there are some kinds of trees that are more apt to be affected by scale than others, but this is merely enough difference to allow one tree to become affected first and others later. They will all get it in time if the scale is very thick. It is true that a cherry tree is not so apt to become covered with the San Jose scale as a peach, plum or apple, but they will get it after the others are partly covered with it. Birds carry it from tree to tree.

Tree agents sometimes offer trees that are guaranteed to live. That is impossible, of course. There are seasons when almost any tree will live and do well. There are other seasons when they will not, and the kind of a tree makes little difference. But these trees are guaranteed to live, and so they must! Suppose one dies. Where is the agent? Possibly he is not in your section any more, or possibly he can be found. What will you do about it if half the trees die? Get after the agent and he'll say that you didn't plant them right, as thousands of his trees have lived all right. In fact, very likely yours will be the first he has ever lost. We all have to take the chance on that dying business. Care in planting will help, but even that will not always make a tree live. It's hard to get ahead of nature every time, although we can help her along a lot.

I know of agents who have claimed their apple trees were worked over on mohalin or cherry roots. Because of this they were very hardy. As a matter of fact it is only occasionally that these two will unite and make growth possible. Certainly it isn't often enough to enable a nursery to offer them wholesale.

Go slow on tree buying. It is better to buy of a local man, or a well known house. The traveling agent may possibly buy his stuff just anywhere that he can get it the cheapest. The matter of utmost importance—trueness to name—matters little to him. All trees look alike when a year old, and especially to a farmer who sees so little of different varieties that he is unfamiliar with the different number of buds to the round, and so on.

In some cases a few miles in your machine will get you to a first-class nursery. They will charge you prices as high as the agent asks, probably, but you will know very quickly from the looks of the place and methods of handling the trees if there is care used in the business. If things look right then go ahead and place your order. You'll be pretty apt to be satisfied with the trees, because you have seen them, and satisfied in ten years when they come into bearing, because they will be true to name. *Ohio.*

Query Answered

Miscible Oil.—A reader at Fergus Falls, Minn., writes us as follows anent the article on "Modern Orcharding" in our Sept. 15th issue: "It was said that in planting apple trees they should be dipped in a weak miscible oil solution. What is that for, what is miscible oil and how is it prepared?

Miscible oil is a "mixable oil"—that is, one that will mix with water and when once mixed will not separate. It is an insecticide and a fungicide. As an insecticide it is a contact remedy, destroying armored insects, such as San Jose, oyster shell, scurfy and other scale insects, pear psylla and many forms of aphis. As a fungicide it destroys apple tree canker, collar and root rot. Trees can be dipped in a solution of miscible oil, both tops and roots, to rid them of the diseases and insects mentioned, before planting. I always dip trees before planting. Mix 1 gallon of the miscible oil with 16 gallons of water for dipping.

A. N. B.

October with its brilliant colors and the tang of its crisp air, is the month of months for family picnics. But what appetites! One wise mother starts a real dinner in her fireless cooker, then her husband packs it and the children in the "Henry" and they are off.

Many perennials, such as phlox and larkspur, may be divided this fall and set out so that there will be more plants next spring.

Observe Your Corn Field Closely at Harvest

A. E. GRANTHAM.

It is at this season of the year that the shrewd observer can find many lessons in looking over the corn fields. Just as the corn comes into ripening, or when it is about ripe, a man will be able to note many of the defects of the tillage operations of the season. Not only this, but the grade of the land and the variation in fertility of the soil may be noted in different parts of the field.

If the crop is "fired," or, in other words, the lower blades have turned dry up to the length of 2 or 3 feet of the stalk before the ear has matured it indicates that the plants have suffered from a drought. In some portions of the country this is noticeable every year. This season in the vicinity of the writer very heavy rains followed close upon the planting season and continued until the corn was 3 or 4 inches high. This made it difficult to free the land from weeds, and more than that, it had the effect of packing down the soil to such an extent that when the dry weather came on later the crop suffered from drought. It seemed that the earlier rains so packed the soil that not only did it not hold the moisture but was not thoroughly aerated. This effect was particularly noticeable where the corn was planted on land that was not in sod the previous year. More frequent tillage would have offset this condition to some extent. The lesson to be learned here is that corn should be planted on sod land wherever possible and this is another reason for crop rotation.

The appearance of the corn crop at this time will indicate also something of the needs of the land for certain elements of plant food. If the corn crop is well developed and slow in ripening it may indicate that the soil was well supplied with nitrogen but lacked the mineral elements of phosphoric acid and potash. On the other hand, if the stalks have not reached normal height and at the same time the ripening has not proceeded as it should it indicates that there may be a deficiency of all the elements of plant food. Well fertilized corn ripens normally. That is, the husks of the ears will begin to turn brown before the fodder is dry. If the husks do not turn dry before the blades it indicates further that there is a lack of phosphoric acid and potash in the soil. Of course, one must remember that different varieties of corn vary somewhat in this respect.

If windstorms have been prevalent since the corn has come into ear it will be seen that many fields that will not produce an average crop of grain have blown down much worse than those fields where the crop is above the average. It is a mistaken idea to think that because the corn plant bears a heavy ear it will be blown down more easily than the shorter, less well developed stalks. From the experimental farm in Delaware we have found that the check plats, or those plats which do not receive any fertilizer, are more likely to be blown down in stormy weather than those plats receiving normal fertilizer. The reason for this is that the fertilized land enables the plant to establish a stronger root system than where no fertilizer is used. The writer has seen plats that would not yield more than 35 bushels per acre blown down badly, while on adjacent plats that would yield 75 bushels per acre the plants were very little damaged by the storm.

If the corn crop does not mature gradually it indicates that the land is deficient in plant food of one sort or another, or that too late a variety of corn is being planted. There is no question that fertilizers hasten maturity. In many parts of the country the cry has gone up among farmers that they will have to introduce a new variety of corn owing to the fact that the crop does not mature properly. This is especially true in the middle west. The chances are that the fault lies in the land rather than in the variety of corn. If the soil has become deficient in phosphoric acid, corn will not mature in so short a time.

To one who understands development and maturity of the corn plant many valuable points may be learned by closely observing the crop at cutting time.

A Thought to the Wind

(Concluded from page 294)

orchards come in between the house and the farm of the nearest neighbor.

Next, care should be taken to see that the barn is not placed to the north, northeast or northwest of the dwelling; otherwise, in case of storm, the house would be in a direct path of the wind. In case the barn caught fire during this time the dwelling would undoubtedly suffer as a consequence.

The barn, the garage and the outbuildings, therefore, should be placed to the south of the house, or as nearly in that location as possible. This would be the ideal location, both from the health and fire standpoints, because strong winds from the south are very infrequent. If there is any air blowing from the south at all it is usually a very mild breeze, which, if the barn is placed a sensible distance from the house, could hardly be dangerous or objectionable. Having the dwelling so that it is directly in the path of the wind which sweeps over the barn is as unhealthy as it is dangerous. By putting the house to the north of the barn, therefore, the unpleasant and unhealthy odors of the barn and the danger of exposure in case the barn takes fire are successfully avoided.

In the South barns are usually built at comparatively safe distances from the houses, mainly because of the comparative rarity of the population and the climate. Where the weather does not become bitter cold the farmer does not mind walking 500 feet to the barn, but in the North where the population is denser, land more valuable and weather more severe, the farmer does not build the barn further from the dwelling than he can help. As a consequence it is even more important to take the wind into consideration in the North, because, where barn and house are very nearly communicating, failure to do so may entail the loss of the house when the barn burns.

The danger of losing the barn by reason of fire in the dwelling, however, is negligible in comparison, because, as I have said, a barn is a greater natural fire hazard. The same applies to the garage. In view of this fact, as well as the fact that storm winds usually come from the north, west and east, it is well to be sure to interpose the house between the high winds and the barn, rather than vice versa; for it is a serious enough matter to lose a barn without losing the house, too, through failure to look carefully into the matter of the wind before building.

Connecticut.

Clover Root Mealy Bug (Pseudococus Trifolii)

H. A. S.

Last year the clover in one of our fields wilted in spots. Some plants died, while others simply lost energy and stopped growing. The trouble was at its worst during a dry period early in August. When the rain came many of the stricken plants recovered and some of them produced a scanty yield of seed. Digging down to find the cause we discovered thousands of tiny mealy bugs on the roots sucking the life juices out of the clover.

We plowed the field after taking the seed crop off and seeded it with rye for winter pasture for hogs. Last spring we turned the rye under and planted the field with corn and now we have a fair prospect for a good crop. This treatment will rid the land of clover root mealy bugs because they cannot feed on either rye or corn, and they do not migrate over into the next field like some other insect pests.

The underground root-feeding clover mealy bug is a very small reddish brown soft bug with a tiny sap-sucking beak. Its length of body is less than one tenth of an inch. It works its proboscis into a clover root and sucks the sap. The younger bugs also feed in the same way on clover stems and leaves. Infested clover plants usually appear somewhat wilted; occasionally they are killed by these mealy bug root suckers, especially during a dry time.

Like corn root lice, these insects are somewhat protected by ants; but in this case they are yellow ants that carry the mealy bugs and their eggs down among the clover roots. The mealy bugs are not dependent upon the ants. It seems to be a sort of lopsided partnership in which the labor is unequally assessed and the benefits uncertain.

There are summer mealy bug females, and winter females; all seem to be endowed with wonderful fecundity. Under the microscope one breeder bug has been observed to lay 200 eggs; other investigators report even greater records. The length of life from egg to mature mealy bug is about six or seven weeks. When about half grown the male spins a cocoon in a protected part of the stems of the clover plant, from which he emerges in about a week with wings. Females and males apparently live together above ground on the clover stems and leaves during part of their existence. During this period the young plant juice suckers attach themselves to the under side of clover leaves in great numbers. With bugs in different stages of development sucking its life juices from root, stem and leaf, the clover plant soon droops and dies. Rotation of crops is the preventive for the clover root mealy bug. There is no remedy.

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Using Rye on Your Farm?

(Concluded from page 294)

land is not too weedy, the seeding may be made with a sharp single disk wheat drill without other preparation. Should the land be weedy, it is best to run over it with a double-action cutaway harrow and follow with the drill. In some cases it is desirable to broadcast the seed before the disking, which will cover the seed sufficiently. The great value of rye as a cover crop is that it is not necessary to prepare the soil so thoroughly as for other fall grain. Any land that is likely to lie bare during the winter may be seeded to rye. The writer has successfully seeded wheat stubble land to rye by using a disk wheat drill when the soil was mellow. The rye was seeded in the wheat stubble without previous plowing or disking. However, it is advisable to put the soil in a good state of tilth if the rye is to be cut for the grain. It will pay under most conditions to apply at the time of seeding the rye, from 150 to 200 pounds of acid phosphate per acre. The phosphoric acid develops a strong root system and promotes greater tillering of the plant and should not be omitted on lands inclined to be thin.

The usual rate of seeding is from 4 to 6 pecks per acre. If sown late the latter quantity is more desirable. There are now several varieties of rye on the market, among which the Abruzzi is especially desirable for the more southern sections, while the Rosen is preferred farther north.

Rye makes an excellent nurse crop for timothy and clover, as the sun gets into the standing rye more readily than it does in wheat or oats.

As a utility farm crop rye is unsurpassed, as it fills the need of a cover crop, pasture and for soil improvement. During the past few years rye has been grown more extensively than usual, partly on account of the price and partly because it is coming into more general use to meet emergencies as a pasture crop and soil improvement.

Protect Your Machinery Investment

How many farmers would leave $25, $50 and even $100 in bills out in the open during an entire winter? Sounds absurd, but scores of such bills, in their equivalent of farm implements are left in the shelter of the broad skies all the year. Few farmers who follow this practice do so with a realization of the great loss they are sustaining on the money invested. A hundred dollar machine left out of shelter over winter, means a loss of from five to fifteen dollars. At this rate it is quite evident that a machinery shed would be paid for in two or three years, even at present building costs.

A suitable shelter having been provided, it is essential to store the implements properly. If the shed has a dirt floor, keep the machinery from resting directly on the ground. Place a board at least under all supporting parts. In order to prevent rust, thoroughly cover every polished surface, such as plow shares, mold boards, cultivator shovels, mower knives and the like with common axle grease. All adjusting screws and nuts should be thoroughly oiled with ordinary machine oil. Every wheel hub and bearing, after a careful cleaning, should be packed with hard grease and replaced. Drills in which lime or fertilizer are used must be carefully cleaned, kerosene oil being liberally applied to all parts exposed to the fertilizer. Binder canvasses should be hung up by wire to prevent damage from mice.

Liberal use of paint is the next step in keeping machinery in the best condition. Of course, all parts must be freed from dirt and grease. Then paint the wood with a good grade of paint pigment mixed with linseed oil. All metal parts, except those greased, must be well covered with the best metal paint; this applies especially to steel parts.

When the cleaning, greasing and painting is being done, one can also make note of each broken or worn part that needs to be replaced. These can be secured during the winter and when the spring and summer work calls for the various implements, they will be ready for duty. How much more satisfactory than to be compelled to sacrifice a day or more for repairing at a time when the machine is needed most. Any farmer who has followed the above suggestions will gladly affirm that dollars are thus saved on each and every implement. Try it and you will heartily agree.

Obey Storage Rules

Vegetables which may be stored during the winter for home use include beets, cabbage, carrots, celery, horseradish, leeks, potatoes and all of the root crops. In the storage of these crops the following general principles must be observed:

1. Vegetables should not be immature or too old.
2. Handle every specimen with care. Decay usually starts where the vegetables have been bruised.
3. If the tender vegetables are exposed to frost before they reach storage, they are not likely to keep well.
4. Even the hardy vegetables, such as beets, cabbage, turnips and celery, may be injured by freezing before they are stored.
5. A fairly constant temperature and ventilation are essential for all vegetables, but some require a moist, cool temperature while others require a dry atmosphere and a higher temperature. Accordingly, if space permits, all vegetables should not be stored in the same place.

Crops, such as root crops and cabbage, or those crops which will stand a moderate amount of freezing, may best be stored in the outside pit, a narrow trench about a foot deep, lined either with burlap bags, dried grass or straw. After all produce to be stored is packed away in this pit, it is covered with a thin layer of earth to keep away sudden changes of weather and the mound is further protected against rain. As the weather gets colder, more earth is heaped on the mound to prevent the contents from freezing. The principle of the outdoor pit is that of allowing the produce to get thoroughly chilled, and then covered up permanently. Care should be taken to insure good ventilation of the crops during the chilling process.

When a cool cellar is available in the house, vegetables can well be stored here. Keep the temperature down as near the freezing point as possible. Windows or ventilators should be watched carefully so as to keep a moderate and even temperature, and to allow plenty of ventilation, the best time to ventilate being when the outside temperature is just about freezing, or at night during warm weather. No vegetable will keep indefinitely. The vegetables should be sorted over carefully every ten days or two weeks, the ones which shows signs of deteriorating being used first.

Combating Field Mice

Poisoned grain, which can be purchased already prepared or which can be made by the farmer or orchardist, can be used to advantage, according to the Minnesota College of Agriculture, in controlling field mice. One ounce of sulphate of strychnine should be dissolved in one quart of boiling water. Add an equal quantity of any sugar syrup and a little oil of anise to make it still more attractive. This quantity of poison is sufficient to treat one-half bushel of wheat or corn, which should be soaked in the liquid for about 24 hours and distributed in localities where mice abound in large numbers.

The poison can be kept from animals and birds by placing it under pieces of board or in tiles or old tin cans. It should be used in the fall as well as in the spring as a means of destroying the mice. It will not afford permanent exemption from attacks of the pests, for mice from nearby localities may later work in the treated area, but it will aid materially in keeping them under control.

An application of thick whitewash is very effective against mice in nurseries. Bluestone solution should be added until the whitewash is quite blue, the mixture being applied liberally with a brush, late in the fall, close to the ground and up the trunks some distance. The treatment should be repeated if possible on some warm day in winter. A spray pump with a nozzle adapted for whitewash could be used in place of a brush.

Canning Compounds

The United States Department of Agriculture in warning housewives against the use of preservative or canning compounds in home canning says: "Their use encourages careless and uncleanly work and in large amounts they may have serious effects upon digestion and health. It is entirely practicable to put up fruits and vegetables so that they will keep indefinitely by processing the products with heat. There is no reason for risk by the use of canning powders.

"Boric or salicylic acid is the basis of most canning compounds on the market today. The directions on the packages usually call for one teaspoon of the compound to each quart of fruit or vegetable. The use of boric or salicylic acid, since they may be harmful to health, is regarded as a violation of the federal food and drugs act. The laws of many states also prohibit the sale of foods containing these chemicals."

Many of our readers will remember the experiments which Doctor Harvey W. Wiley, the eminent pure food authority, conducted for the government a number of years ago with twelve young men who were fed rations containing borax and benzoic acid over a long period. Dr. Wiley, in a recent letter to us, said, with reference to the results of these experiments: "Some of the young men could tolerate these chemicals for a considerable period of time, but finally very well marked symptoms of disorder were developed in all."

Pearl MacDonald, who is in charge of the Home Economics Extension Service, Department of Agricultural Extension, Pennsylvania, says in a recent bulletin on the subject of preservation of fruit and vegetables: "It is believed that nearly all preservatives of this character interfere to a greater or less extent with digestion." She then explains why such preservatives are particularly injurious to children and to invalids.

When authorities agree that chemical preservatives are never beneficial, and that it is only a question of how injurious they are, the only course that is perfectly safe is to avoid their use entirely. A canning powder, to be effective and kill the bacteria which may be present, must necessarily be a disinfectant or poison of some kind. Certainly the human stomach is no place for such chemicals. Fortunately their use is entirely unnecessary under any circumstances, as modern methods accomplish perfect results without outside aid.

To Make Pennsylvania the Leading Potato State

That it is possible for Pennsylvania to stand first in potato acreage, yield per acre and produce more potatoes than any other state, is the belief of Professor E. L. Nixon, extension plant pathologist at the Pennsylvania State College, provided methods of certain growers in Lehigh county are followed generally throughout the state. The banner crops of this county for this season are the results of modern cultural methods and recently drew a delegation of farmers from all parts of the state to see at first hand just what proper seed selection, fertilization and spraying will do in the way of producing far greater than average yields.

In spite of the late blight that will tend to lower the state potato yield by millions of bushels, Lehigh county this year will have a crop of 3,000,000 bushels. The growers there make potatoes their money crop and of recent years have been brought to see the necessity of adopting recommendations offered by the State College agricultural specialists. Those growers who sprayed their potatoes regularly through the season now see the wisdom of this procedure through their increased and clean yields. Seventy-five representative potato growers from fourteen counties spent a day visiting typical Lehigh farms and under the guidance of Professor Nixon, who organized the trip, they absorbed a valuable lesson which they are spreading to other growers in their respective communities.

According to Professor Nixon, one of the prime factors in making Pennsylvania the leading potato state, is the manner in which hundreds of boys in potato clubs are taking to scientific methods in raising this crop.

The Fur Situation an Opportunity

Farming of wild fur-bearing animals and the establishment of large sanctuary tracts is urged by the United States Department of Agriculture as the only sure means of preserving the fur supply, which is being diminished to the vanishing point. Muskrats, skunks, foxes and minks are among the animals which can be successfully bred in captivity or under conditions of semi-domestication.

Decrease in the supply of fur-bearing animals in the United States, coupled with a vastly increased demand, leads the department to urge domestication of the animals and the establishment of preserves where they may be safe from molestation.

Unless fur-bearing animals are rigidly conserved, the Biological Survey declares in Department Circular 135, the time is not far away when many of the more valuable species will be exterminated and furs will be worn only by the very rich. This fact is said to be recognized by the fur trade generally, and by individuals who have made a study of the subject.

Directly or indirectly fur contributes to the support or comfort of a large part of the population of the United States. We import as much fur as we produce. In other words, we could sell at home twice as much fur as we are now producing, in addition to the foreign demand.

Since 1914, the center of the fur trade has been transferred to the United States. The greatest fur sales in history are now being held here, and all branches of fur dressing, dyeing and manufacturing are being successfully carried on by American enterprise.

Most of the fur goods produced in America are manufactured in or near New York City, where in 1918 there were about 60 dressing and dyeing plants, 500 dealers, 1200 manufacturers, 18,000 operatives and an investment estimated at between $200,000,000 and $300,000,000.

Values of skins have risen to heights that have surprised even those on the inside, and skins that formerly had little or no value as fur became popular under various trade names. A comparison of the highest prices paid at the October sales in St. Louis in 1915 with those in 1919, illustrates the increase in fur values. Beaver advanced in these four years from $17 to $38.50; otter from $14 to $101; muskrat from 36½ cents to $5.10; red fox from $15.20 to $64; fisher from $25.50 to $205; skunk from $3.36 to $10.60; marten from $15.20 to $145. The crest of the rising wave of fur values was reached at the auction sales of February and March, 1920, when weasel brought $4.10; muskrat, $7.50; skunk, $12.25; raccoon, $30; lynx, $66; red fox, $71; mink, $75; otter, $105; marten, $201; and fisher, $365. The fur market has been greatly depressed recently, but its recovery to normal demand and prices in the near future is anticipated.

The Biological Survey cites the case of one man who bought a mink-lined coat complete in 1913 for $500; after wearing the coat two years he sold the lining for $1000 and replaced it with nutria at a cost of $150; in 1917 he sold the nutria lining for $250 and put in a muskrat lining at a cost of $55; in 1919 he sold the muskrat lining for $300 and still has the shell of the coat and a clear profit of $845. Two boys near Ottawa, Ill., sold $1000 worth of muskrat, skunk and mink skins during the winter of 1919-20. Alaskan trappers in 1918 sold furs valued at $1,363,600. Skunk skins are estimated to have brought $1,00,000 to New York State trappers in a single year.

A fact not generally known is that the United States Government realizes millions of dollars annually from its fur industry. The sealskins taken on the Pribilof Islands by the Bureau of Fisheries in 1919, to the number of 27,821, were worth nearly $4,000,000. From these islands, the same year the government harvested 938 blue foxes, with pelts worth $165,000. The skins of bears, bobcats, coyotes, mountain lions and timber wolves killed by predatory animal hunters of the Biological Survey in 1918 and 1919 brought nearly $160,000.

In the resultant stimulation of the fur garment trade the department foresees an intensified pressure on fur-bearing animals, which have been rapidly decreasing in number as a result of excessive trapping, clearing of forests and draining of marshes. Already beavers and martens have been exterminated over a large part of the country. Even in Alaska trappers have had a close season of several years declared for the protection of beavers.

Reports from raw fur buyers indicate that fur-bearing animals have decreased approximately 50 per cent. during the last decade. A raw fur buyer in Boston declared that the muskrat supply of 1918-19 was 50 per cent. short of normal, and the following winter had decreased another 50 per cent. In 1917 Wisconsin trappers took 800,000 muskrats; in 1918 less than 300,000 and in 1919 only 150,000.

The department urges stringent uniform state laws and close seasons over periods of years for the protection of species, but it believes that still further measures are necessary to preserve fur-bearing animals.

Department Circular 135 asserts that a greatly increased production can be made possible only by domesticating the animals, just as live stock are now raised, and by establishing preserves for them where they will be safe from molestation. Protected areas stocked with the best fur animals that can be found will become centers from which choice breeding stock can be obtained for establishing other preserves and for private use.

Wild creatures soon learn where they are safe from molestation. Wild water fowl in city parks swarm around visitors who feed them as if they were domesticated. Wardens in Jasper Park, Alberta, say that as soon as the hunting season approaches many wild animals take refuge in the park.

Muskrat farming is a profitable industry in Maryland. Marsh owners in Dorchester county harvest from 100,000 to 125,000 muskrat skins a year. There is a market for the meat as well as for the fur. A single Baltimore firm handles 25,000 to 30,000 muskrat carcasses a year and is unable to supply the demand at that. One Maryland hotel has them on the bill of fare as "marsh rabbit." Marshes that were considered valueless are now worth from $30 to $40 an acre for muskrat culture.

Experiments in propagating fur animals in confinement have been tried with varying results. The Department of Agriculture has already determined that silver foxes, black foxes, blue foxes, skunks, and muskrats can be farmed profitably under suitable conditions. The department calls the attention of farmers to the desirability of keeping poachers off their forest lands and encouraging fur-bearing animals by preserving hollow trees and by substituting animal-proof chicken yards for the gun and trap in protecting their poultry.

Harvest Carefully — Save Winter Spoilage

Proper harvesting is the most important factor in preserving the keeping qualities of storage fruit, according to the New Jersey State College of Agriculture. Picking when underripe, or allowing to hang too long are equally wrong. The seeds should be black and the stem should separate easily from the spur, before picking is commenced. If the color is subnormal, it is sometimes policy to let the fruit hang for a few days, since lack of color is as damaging as some overripeness. Careful handling is essential. Bruises either rot or dry out in storage, injuring the fruit in either case. Picking should be done in burlap-lined baskets, or bags, and the fruit should be handled as little as possible between the tree and the storage package. If picking is done in bags, not more than three-fourths of a bushel should be allowed to accumulate at a time, as it is impossible to handle a fuller bag without bruising the fruit on the ladder and limbs. All sharp edges on crates, chutes or grading machines should be rounded off so as not to cut the fruit. Wherever the apples move rapidly or fall, padding should be provided. Fruit should be moved from the tree to the storage as quickly as possible. The keeping quality is much shortened if fruit is allowed to stand in the orchard or shed after picking. The old policy of sweating fruit in piles under the tree has no scientific foundation, except as a means of ripening fruit quickly.

"Next year I'll do that differently," says the home gardener from the depths of his 1920 experience. Why not write those points down now to have handy for next spring?

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Packing Eggs to Prevent Breakage

Tremendous losses occur annually, due to the breakage of eggs on their way to market. Much of this loss can be prevented if the eggs are packed more carefully before they are shipped.

If the poultryman uses a second-hand case, it is necessary to renail it, no matter how good and sound it may appear. Any loose pieces should be made solid and the bottom securely nailed. By the driving of a few nails the crate is put in perfect condition.

After the crate is ready the fillers should be inspected, and only good stiff fillers used, with sufficient packing at bottom, top and between layers of eggs to prevent jarring and breaking. The best materials to use in packing eggs are especially prepared excelsior pads, which consist of sheets of excelsior about one-half inch thick wrapped in thin paper which holds the excelsior in place, and makes it an efficient packing material.

The Poultry Department of the New Jersey Agricultural Experiment Station has tried the following method of packing market eggs with such good results that it can be highly recommended. First, place an excelsior pad in the bottom of each compartment of the crate. Directly upon this pad place a filler and fill with eggs as usual, packing the eggs with the small end down. If no flat is placed over the pads, the eggs will bed themselves in the excelsior and ride safely. Three layers should be packed as usual, alternately flat and filler, with an excelsior pad instead of a flat on top of the third layer. Continue to fill the crate, using filler, flat and filler. On the top use an excelsior pad with no flat. This method leaves only one layer, the second from the bottom, without a cushion directly above and below it and holds the contents firmly in place.

Nail the cover at the ends. Never nail an egg case cover in the center. Pack so that when the cover is nailed down at the ends there will be a bulge in the center. This means pressure enough to hold the contents from jarring and breaking. It means a natural cushioning of the eggs in the excelsior with which they come in contact, thus giving the entire contents a springiness which insures safe transportation.

Daylight Saving for the Poultry Flock

Artificial illumination proved to be a great factor in heavier egg production last winter on a large number of poultry farms in the Middle Atlantic States. With proper care and feeding it resulted not only in more eggs when prices were high, but also a greater number of eggs per hen for the year. As a result, many houses are now being wired for the use of lights this season, and questions as to methods of installation are being raised.

The New Jersey Agricultural Experiment Station has accumulated some interesting information on the lighting question through a questionaire to poultrymen who used lights last year. The data collected show that where lights were used in the morning, in the evening, and both morning and evening, the best results were obtained from morning lighting only, with the lights being turned on at about 4 o'clock. This plan seemed to be the most convenient both as to time of lighting and methods of feeding. While some success was had with gasoline lanterns, electric lights were far superior in the actual light given and economy of labor in operation.

Where lights were used too early in the season and the birds made to produce heavily in the fall, there was usually a slump in the winter because the birds suffered either a partial or complete moult. The best time for beginning the lights seems to be around November 1, and in general beginning at this time production should continue on through the season with no checks because of moult or other reaction. In placing the lights in the house, while many use a drop cord with the lamps a short distance from the floor, apparently it is better to place them higher; for example, to the purlin or the rafters, in order that a greater floor space may be lighted. Two 25-watt lights to 100 birds, about 10 feet apart in the house, are preferable to one 40-watt light in the same space. Using lamps at this distance eliminates the casting of shadows.

The real factor, however, in artificial illumination is feeding. When birds are in a condition of high production, especially through the winter months, it takes very little to throw them out of production and thus into a moult. Special care must be taken that they are fed regularly and in sufficient quantities. Feed and drinking water must be present when the birds come down from the roost, whether placed there the night before or in the morning.

In order that artificial illumination may be considered successful, increased production should be secured throughout the winter; no noticeable decrease in production should follow discontinuance of lights in the spring; and the production through the summer months should be nearly as high and continue as late as if the birds had been without lights. Many poultrymen suffered loss of production and heavy moult through considerable periods when the lights were taken off last spring. In most cases it was caused by taking the lights away suddenly and changing the method of feeding.

Don't Undervalue the Skunk

Few persons have seriously considered establishing friendly relations with a skunk. It has been done in some cases under the misapprehension that the animal was a cat, and the results have been unpleasant. But the Biological Survey of the United States Department of Agriculture has investigated the skunk and found him to be the best wild animal friend the farmer has. Almost any farmer might have two or three dozen skunks at work for him destroying mice, grasshoppers, crickets and white grubs and furnishing him from $50 to $100 worth of fur a year. All that is necessary is that he respect their dens, keep his poultry in skunkproof yards, kill an old horse for them every fall, and be tactful when he meets them in the evening. There is a marked depression of the fur market at present, but recovery to normal is anticipated.

It has been estimated that a year's catch of skunks in New York State is worth $1,000,000. Only one-fifth of them are black or short striped. If all were of this higher grade they would be worth $3,000,000. The department suggests that a preserve stocked with black skunks would eventually double or treble the catch of skunks in the territory surrounding it.

Condition Pullets for Winter Egg Production

Before a pullet begins to lay she must be mature and have stored up a surplus supply of body fat. If pullets are mature at this time of the year all animal food should be removed and only grain, such as corn and wheat, fed for about two or three weeks. This will insure enough body fat to carry them through a heavy winter production. Many farmers believe that their poultry is too fat to lay, when as a matter of fact only a fat hen will lay. When hens become too fat, it is the best indication that they have not been properly fed on a ration of meat scraps or tankage which is necessary to egg production.

Building Feed

Farmers have for years wrestled with and solved more or less satisfactorily the various feed problems presented by their occupation. They have had to deal with the question of the balanced ration in hog feed, dairy cow feed, horse feed, chicken feed and even plant food.

And now appears on the farmer's horizon, a scientist who tells him that even his buildings must be nourished; that a house, barn or outbuilding that is kept painted with good paint will last over a hundred years; whereas, an unpainted one will fall to pieces in ten years; that a neglected building dies just as surely as a horse or cow that has nothing to eat. The argument is logical from a scientific standpoint, and it behooves farmers to attend to the proper nourishment of their buildings, for we all know that the cost of rebuilding and of repairs is almost prohibitive nowadays.

To Stop the Forced Sale of Farm Products Below Cost

As we go to press there is being held, in Washington—on Oct. 12th and 13th—a meeting of farm interests, called with the avowed purpose of finding a means "to stop the tendency of those in authority to force our farm products on sale below the cost of production."

The call for this meeting was issued by the chairman of the National Bureau of Farm Organizations, the president of the American Cotton Association, the Commissioner of Agriculture of Georgia, and others.

Need of immediate action is indicated by the disastrous downward trend in prices of farm commodities regardless of costs of production, following recent announcements of the attitude of certain government officials.

Protesting the recent public declarations of the Secretary of the Treasury with reference to the credit situation, Congressman Upshaw, of Georgia, wired Secretary Houston, September 29th, in part as follows:

"I regret to report that your published decision not to encourage southern farmers in handling their cotton crop at a living price has already had a tragic effect. * * * * Patriotic farmers and business men of the South have no disposition to hold to wartime prices after the present crop is sold at an honest price to cover production, but your announcement has cost the South millions of dollars, and unless something is done to bring back the price of cotton at least to a cost basis we face widespread bankruptcy and indescribable chaos in a section that has been too loyal to deserve such treatment."

The above extract from Congressman Upshaw's letter reveals a most deplorable situation which applies not alone to cotton raisers, but to wool growers, live stock producers and others. It is expected that practically every section of agriculture will be represented at Washington at this meeting, and if there is any way to improve the situation before congressional action is taken, it is hoped the remedy will be found.

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Our Favorite Breed of Swine—And Why

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1303, Nov. 15.—Let's discuss our practical experience in underdrainage. What kinds of soil have you underdrained, what difficulties have you met and how have you overcome them? How about subsoiling with dynamite? Please give us the *"why, how and when"* of your experience in this important matter.

TOPIC No. 1304, DEC. 1.—Medicinal Herbs. What do you grow and what do you search the woods and fields for? How do you gather and preserve them? Do you sell them or just use them in your home, and, if the latter, how? This topic is proposed by a reader and we think it may be made a very helpful one if each correspondent gives complete, but concise, information.

W. H. H., Prince George, Va.—I have had experience with a good many breeds, and will say that I prefer the Berkshires and Duroc Jerseys, the Berkshires being first choice. I find in this breed that the bone is small, they are easy to keep, thrifty and grow off more rapidly on the same amount of feed than other breeds.

We have a pasture of several acres which takes in a ravine. A stream of running water goes through the center, and the hillsides abound in nut trees, such as oak and beech, which furnish fine hog feed in early fall. We allow the hogs to run at large in this pasture all the time, and by feeding a slop twice a day, composed of fine feed or middlings and a little corn meal mixed in, they are kept steadily growing and nearly fat enough to kill most any time. We seldom feed any hard corn during late spring and summer.

Again, the Berkshire is a black hog, and the carcasses of most black hogs generally show up white and nice when properly dressed, therefore bringing the highest market price. The meat is always firm, unless when running on the peanut fields after the crop is harvested; and even in this case, when put in a moderately close pen and fed on hard corn for a week or ten days the meat will be of a firm, solid nature.

While I prefer pure-bred stock, I am not of the opinion (like a good many) that certain breeds will bring higher prices, for I have never yet found any difference, as a nicely cleaned fat hog of any type will bring the top price. But experience has convinced me that the Berkshire is the best all-around hog to raise either for home consumption or for marketing.

Mrs. W. H. H., Needmore, Pa.—I have given the hog problem considerable study, and have not yet formed any definite opinion, but am fully convinced that most of the success depends upon the locality and the breeder. I have raised different kinds of pure-breds, and find the cross-breds have been the most profitable. This may have been due to the feed given them, or the way they were handled. Therefore I think every breeder should raise the kind that thrive best on the feed raised in his locality, for raising the feed on our own farms is a great deal cheaper than buying feed.

I am a strong believer in pure-bred stock of all kinds, therefore have tried the different kinds of swine—Chester Whites, Berkshires, Poland-Chinas and Duroc Jerseys, but the Berkshires were a failure in spite of my determination to make them prove a success; the Chester Whites and Poland Chinas run almost hand-in-hand as to profit; the Duroc Jerseys cross-bred with Poland Chinas, and Chester Whites cross-bred with Poland-Chinas, have been the most profitable. They thrive better on less feed and less attention than any I have yet had experience with. Of course, this may be due to the location or handling of them, therefore I think it a good idea to try the different breeds, as experience is our best teacher in this case.

But when stock is raised to be sold for breeding purposes, of course, the pure-bred is the proper kind, but little of that is done in our section; most of our stock is sold for butchering. Three points all successful swine raisers must practice are: Keep them free from lice, give clean quarters and plenty of pure water or good swill.

Mrs. O. J., Rio, La.—We have raised several breeds of hogs, all of which, with proper breeding and care, are good. Duroc Jerseys are our favorites as present, as they seem to be better grazers than either the Berkshires or Poland Chinas. We have raised some very profitable grades, but pure-bred stock of any kind is best; they grow faster, fatten more easily, are more uniform in size, shape and color. The meat is laid on in the choice cuts, and the better animals can be sold for breeding at a much better price than a grade would bring.

I would never mix breed unless unavoidable; then only for porkers. Such animals are not fit for breeders. About twenty-five years ago, when hogs were much cheaper than now, we paid $50 for a sow—a Berkshire-Poland China cross, the finest looking sow I had ever seen. She always brought from 10 to 12 pigs at a litter. They lookcd nice at first, but in three weeks began to lack uniformity. At six months of age they would look like a bunch of scrubs. Mated to the best male we could procure, she never produced an offspring equal to herself. One of our neighbors had a nice drove of Chester Whites. Finding it inconvenient to procure a male of the same breed, he used one of another. The young cross-bred sows looked promising, so he saved them for breeders. Now his swine have degenerated into little more than scrubs.

M. A. C., Newtown Square, Pa.—In years past we thought no swine could compete with the Chester Whites, and we always had the best that we could procure. But, after reading so much in favor of the Jersey Reds, we thought we would give them a trial and see the qualities of the different swine, so invested in the pure Jersey Reds, and found them very satisfactory in every respect. We then tried the pure Berkshires, but soon discarded them, as we found the young pigs too slow in growth, and have settled on the Jersey Reds as the best breed of swine. They seem more hardy and the young reach the 200-pound limit in shorter time. We have had them do it in seven months, but could not do so with other breeds. We would always have the pure-bred, as they command better prices and there is a standard color, and not all colors, as is mostly the case with grades.

H. E. S., Drewrys Bluff, Va.—Yes, I very much prefer pure-bred hogs, because (1) they sell better for breeding purposes and usually bring a better price; (2) the owner of any pure-bred and expensive stock takes better care of them than scrubs, and this alone makes the stock more profitable, and I think better results are obtained than with scrubs having the same care. I have tried other breeds of hogs, but now have registered Durocs, also two grade sows, and I consider the Duroc the best all around hog in our section, because, 1st, they take on fat as good as any other breed and attain a good size; 2nd, they are very gentle and docile; the old Duroc boars seldom become vicious; 3rd, the sows are very prolific and are good, gentle mothers. My sows average about 12 pigs at each litter, and seldom lose more than one or two. I find the Durocs to be good foragers. Mine get at least half their summer feed on pasture of cow peas, soy beans, corn and sorghum, also wheat, vetch and clover sown in fall. I will have to be shown a better breed before I change, and under no circumstances will I go back to scrubs.

Mrs. H. L. P., Needmore, Pa.—Berkshires are my favorite breed of swine, and I think it pays to raise pure-breds. The following is what a neighbor has done: He sold a bunch of pigs 152 days old that averaged 152 4-5 lbs. in weight, and brought him $22.92 per head. Of course, prices were a little better when he sold them than now. They were pure-breds, but he said they did not take any more attention, nor eat any more than "razor backs."

A. J. L., Albion, W. Va.—My favorite breed of swine is the Chester White. However, any of the standard breeds are much better than scrub hogs. My reasons for favoring the Chester White are that the sows usually farrow large litters and if the proper feed is given they will furnish an abundance of milk. The young are strong and healthy. The Chester Whites as a breed excel the other breeds in gentleness and quiet disposition. They are not inclined to break fences, and yet they have sufficient energy to shift for food. I have tried Durocs, Poland Chinas and crosses with Berkshire. I prefer the full bloods in preference to crosses and grades. Cross breeding and grading usually result in a sacrifice of uniformity in the general make-up of the animals, as well as disposition.

J. W. R., Carbondale, W. Va.—We have had years of experience in growing swine; in fact, we have made this branch of live stock farming something of a special study and at one time or other have tried out most breeds. Our total experience, summing it all up, prompts us to say that the Duroc, big type, is the sure winner, and if this was a lengthy article we could almost convince the average farmer of this fact. They are singularly free from disease, very gentle in demeanor. The mothers bear large litters and are good sucklers. They grow into meat rapidly, and, best of all, it requires less fencing to keep them confined, because they are not inclined to "rogue." But whatever breed you keep, you must learn one important fact. You will find that your profits depend, more than anything else, upon the kind of pasture you furnish them.

We grow, for our swine, red and burr clovers, rape, rye, oats, etc., and for the finishing we grow corn and let them hog it down, though we do not allow them to range the entire field. We cut off one-half acre at a time by means of a temporary hog fence.

To Renew Gilded Picture Frames

Picture frames become soiled and shabby just as do door and window frames. If they are gilded frames, they are more delicate than the trim of rooms and become soiled even more easily. Washing frames sometimes freshens them up, but the best way to do it is to go to the paint or drug store and buy a little package of bronzing liquid. For some reason these liquids do not come mixed ready for use as does paint. The solution or liquid is in one compartment of the can and the bronze powder in another. It's a very simple matter to compound them when ready to do some gilding. It takes but a few moments and costs but a few cents to re-gild a frame and you've no idea how it brightens up a room to have the gilt picture frames treated as suggested.

Real Support

Occasionally you hear somebody assert that he supports his home paper, meaning that he subscribes for it. Support means a great deal more than merely taking the paper. It means paying for it in advance, for paying whenever it is convenient works a distinct hardship on the publisher and actually hinders him from doing his best with the paper. Support means help in other ways. It means that you help to make it newsier. If you know any items of news, you are supporting the paper when you hand them in. If you agree with the movements the paper is encouraging, you can support the paper by commenting favorably upon the paper's attitude.

Supporting a paper in the true sense is no act of charity. Your local paper is worth many times over its cost to you.

Are you really supporting it—or do you merely take it?

[The above, clipped from a Wisconsin village paper, strikes us as worth reprinting—and worth thinking about. And it is as true of your relations with your farm paper as with your village paper. Are you really supporting—or merely taking *this* paper?—EDITOR.]

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This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address

WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

NOVEMBER 15.—Thanksgiving Day used to be a joyful "harvest home," and an occasion for the expression of heartfelt gratitude to God for His many mercies to us as a people and as individuals. It's a pity that many have drifted away from the original idea of the day. If you maintain the real old-fashioned Thanksgiving Day won't you please *tell us all about it?* Perhaps you can help some "drifter" to get back into the spirit of it.

DECEMBER 1.—It is time to solve the Christmas present problem again. Can you help some of your farm sisters with a suggestion as to how they may make or secure at a moderate cost, really attractive and useful presents for their men folks, children and women friends? Please don't tell us of the "old stand-bys," but of something "different"—give us an idea, not a "chestnut."

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Practical Points on Floor Coverings

Mrs. N. W. W., Port Crane, N. Y.—Body Brussels rugs are firm and durable for living rooms, and look well with a floor border of only a foot or two in width. They should be chosen in indistinct, small patterns, and neutral tints, or those so well blended as to be restful to the eye. They should be turned end for end once a month or so, to keep all sides worn and faded evenly.

For the dining-room nothing is quite so excellent as a bare floor, varnished, oiled or painted, as you prefer. Ours is a hard-wood floor kept oiled only. We use a small rug or two before the window seat, or wherever else we wish to sit. Somehow, one likes to walk on a bare floor, but prefers sitting where the feet rest on a rug or carpet. This also protects the feet in cold weather.

I used up my old ingrain carpets when they were worn out too much, having rugs woven out of them by a professional at a dollar per square yard. These may be large or small, as preferred, and bed-room or other floors where they are used may be painted, or prepared as one wishes.

With prices as they are at present is it not very good, indeed, to utilize whatever we have that can be used for little else, and make home-made rugs instead of buying them? It does not matter whether we have a good deal of money or none at all—the principal of the thing is there just the same—to positively not buy anything we can do without until reason and right thinking make it possible for us to buy without paying exorbitant prices for what we purchase.

I make my own rag rugs thus: I collect whatever is not worth anything for making over wearing apparel, dye white or light colored cloth, clean and press and thoroughly wash whatever needs it. Then I cut the light-weight rags into inch wide strips, the heavier ones a quarter inch narrower, sew color to color, or hit-and-miss, as I prefer. I usually select all the rags of one color for the border. These, with hit-and-miss centers make, to my mind, the most attractive rugs. I then crochet my rags the shape and size of the rug desired. Chain a length loosely for the rug's width, single crochet once into each chain, chain one, turn, single crochet into each inner stitch, not taking up the back stitch at all; repeat this for length desired. Always chain one at the end of a row before turning, as this keeps the work even. When you have crocheted a strip as long as you want for the center, fasten and cut off the end, leaving a length to crochet under when putting on the border. A length crocheted under instead of pulled through, or sewed down, suits me best in most kinds of crocheting. The border is made like the center stitch. Crochet across each side as wide as you wish border, then across each end. The last end of carpet rag should be pulled through the meshes and sewed down tight.

Such rugs as described here are heavy enough for most purposes. The stitch here described is good, as it take less material than when both stitches are taken up, and is easier to clean than when a back stitch is taken up, thus leaving a ribbed effect. A large crochet hook purchased for the purpose will be found necessary. The work is attractive, uses up otherwise unusable materials that would revert to the junk man or be wasted, and these rugs are very attractive if good taste in dying or choosing combinations has been used. The square cornered rugs look best, we think. The round ones have somewhat the appearance of "spots," somehow, while the same size square rugs look like that for which we intend them.

C. J. L., Bridgeton, N. J.—I never had a yard of carpet in my home, unless it was a yard to be made into a rug. We started out to use rugs, and rugs we continue to use. They are more sanitary and easier to handle. First we purchased 10x12 rugs for four rooms—living room, dining room and two bed rooms, and had polished borders. The borders were dark, and showed dust easily. I do not intend to spend any large portion of my life going after dirt on floors. I prevailed on my husband to paint the floors a light new wood color and then put an oak varnish on.

In the winter I use the large rugs, but in summer they are cleaned and rolled on the pole they came on and suspended from the ceiling in the third story store room. Small rugs are placed where we walk the most on the floors. When I clean, these rugs are quickly and easily taken up and carried out of doors, then with my oiled mop I soon have the floors of seven rooms and two large hallways clean and shining. I can do the whole house without making any dust, while the women with carpets are sweeping or kicking up a dust to settle on furniture and to be gone after again. I am thankful I am free from carpets and sweeping.

Only the other day I was calling on a woman equally wedded to carpets. She said she had told her husband she hoped he would always be able to buy carpets, because (she thinks) she does not like bare floors. I told her she would not like my home, then, but I believe if she should see it and understand how much time and labor it saved the busy housewife who wants to have an immaculate appearing home, she could be converted to making her carpets into large rugs and having a bare border, and the carpet easy to take up.

Oh, I save for carpet rags, but I have the rags woven into rugs instead of carpet. I never get enough rag rugs, two yards long by one yard wide. I order the warp a color to blend with the color scheme of the room the rugs are to be used in.

Most of our floor coverings were purchased before the day of such high prices, and by the changes made for summer and winter they have not worn out. One time I was in a home where a big rug had been folded and placed in a storeroom and a mouse had gnawed a big hole where there had perhaps been a grease spot. The woman got some material to match as near as possible and pasted it under the hole. Right then and there I determined to never take chances with mice, and thus my rugs are put away very clean and suspended.

This winter I anticipate knitting or crocheting some big rugs from carpet rags. These old-fashioned carpet rag rugs look much more picturesque than the modern high priced rugs. Ofttimes you can find a remnant of a yard or two of good carpet from which you can make rugs by putting some fringe on the ends. If I could not afford expensive rugs I would get the same effect with matting or carpet, and I always use small rugs for the places where there is the most wear.

Mrs. J. C., Ethridge, Tenn.—What is more sanitary or nicer looking for floor coverings of the farm home than to have a nice, smooth floor with rag rugs around where we wish them to be? I have made very pretty ones with a large wooden crochet hook, using best rags from worn-out clothing, sheets, etc. Where a variety of colors is needed, long white strips may be dyed any color desired and torn the width needed. The rags are torn, sewed together, then worked around double crochet as in any other work, using more stitches with each row to make it lie flat. Rugs worked in stripes are attractive. A color scheme that I like is to begin with hit or miss (all colors) for a center of about 18 inches, then a stripe of black, light blue, then black, narrow one of yellow, then use black, blue and black again. This is pretty surrounding the vari-colored center. They can be made with a treble stitch, but, of course, they will be more open. They can also be made round, oval or with square corners.

M. S. P., Manhattan, Kan.—Four years ago I faced the problem of furnishing a house as economically as possible. Having studied the principles of house decoration, I was determined that my house should demonstrate that one could secure a harmonious and attractive effect with inexpensive materials. My first consideration was the floors, for I knew that if they were wrong the whole effect of the house would be spoiled.

After much debating and several shopping trips I bought two grass rugs each 9x12 feet in size. They were exactly alike and were of plain color in shades of brown, with no border or design of any kind. I have found them most satisfactory. They were inexpensive at that time, and are still comparatively so. They look well. No rules laid down by decorators are violated by them. They clean well. I find that ordinarily I can keep them in good condition by going over them occasionally with a mop wet with salt water. This preserves the color and makes them wear better. If much soiled I scrub them with a brush.

I have lived in two houses since these rugs were purchased. In both cases it has been an advantage to have the rugs alike, as the rooms have opened off each other, with double doors between, giving them the appearance of a single large room. It is easier to keep this effect when the floor covering is the same. One should realize that these rugs are not as durable as most other kinds. Mine have received good care, and after four years they are still good. When they do wear out I shall feel that I can afford to replace them, as their original cost was so small. When I have to get others I shall probably get this type of rug, unless I can afford something very much better.

Mrs. E. M. A., Ashville, N. Y.—If a method could be devised by which the life of rugs and carpets could be prolonged indefinitely, the originator thereof would have his fortune assured, but I know of nothing beyond keeping all floor coverings free of wrinkles and the most exposed spots coveded with smaller rugs, strips of carpet or pieces of linoleum. By the way, it is equally essential in these days to protect our floors, with the price of ordinary flooring hovering around $300 per M. A good coat of varnish helps very materially on the linoleum, and, of course, every one knows the value of paint on all woods.

One sees more patched rugs and carpets than formerly, though, of course, it must necessarily be quite conspicuous. About the best one can do is to patch as neatly as possible with fairly heavy cloth in a color similar to the background—no one would have the same material to use in repair work. Quite badly worn linoleum may be revived for some time by a coat or two of good floor paint, but the pattern must obviously be sacrificed. The effect, however, is often just as satisfactory. The best way to make these things wear is to put them away carefully and leave them alone, being careful to protect them from vermin. Then if we lived on a dirt floor, as the Indians used to do, these problems would cease to trouble us.

Mrs. M. F. S., Georgetown, Del.—Having made several varieties of rugs, I find those made from old ingrain carpet the most desirable, as they are very durable, as well as soft to walk on, and will keep in their place on the floor. One can make them as large as desired. The method of making them is as follows: Cut the carpet on the bias, about 4 inches wide; then with a coarse needle fray out the edges, making a little fringe on both edges; fold this a little less than in the center, so when lapped over one edge is a half inch higher than the other. Then with a very strong thread sew this on a foundation. I think blue striped bed ticking is preferable, as the stripes serve as a guide to keep the work straight and even. If one has two kinds of ingrain carpet it can be striped at the ends, but if all alike they are very nice and easy to shake out the dust.

I also like a heavy braided rug, made of coarse rags, to stand on when ironing and one in front of the table where one stands so much in preparing the meals. The feet do not get so tired as standing on the bare floor.

Mrs. W. H. H., Needmore, Pa.—I was fortunate enough to have all my necessary floor coverings before the enormous advance in price, but to preserve the life of them has been my constant aim. This has taken considerable study, for there are always places where carpet and rugs are worn harder than others, and, of course, if not protected will soon be threadbare. I have no carpet, but five room-sized rugs. I rather prefer a carpet, but I think rugs the practical thing to buy, especially when one rents (as we did when ours were bought), for rugs can be used to so much better advantage than a room-fitting carpet. First, rugs can be put down and taken up in one-third the time it would take for a carpet. Second, they are so much easier cleaned, especially when they are seamless, as mine are; the seamless are the proper kind, for the seamed ones will in time rip, and it is almost impossible to sew them to hold. Third, rugs can be turned end for end; if reversible, upside down, or can be changed from one room to another, which makes it not at all difficult to place the worn parts where they will practically not be worn at all.

I use carpet paper under all my rugs, as this greatly aids in preserving them. Small rugs and short lengths of carpet placed where the hardest wear is given, saves many dollars.

I have never had any experience with mending rugs or carpets, but should think it rather difficult, except small rugs; when the ends begin to fringe, or ravel, they may be cut straight and bound back with rug binding or burlap. Rugs and carpet can be very nicely cleaned with salt, or sawdust dampened with gasoline.

Miss E. G., Buchanan, Va.—It seems generally conceded that woven rag carpets give longer wear for the investment than any other floor covering, but they have the very objectionable fault of holding dust, on account of which we use Crex grass rugs. Two such rugs bought of a well known mail order house have been in constant service for eight years, one of which is almost as good as new, while the other, which has seen the hardest kind of use, has been darned and washed quite a lot. I use the soft, loosely woven hemp or jute string and a regular upholsterer's needle for this mending. These rugs let the dust through and require very little beating when cleaning. In bad weather we roll rugs back, tear up well soaked newspapers over the floor to collect dust, then after sweeping run over the floor with a damp mop or home-made dustless duster (made by sprinkling an old undershirt with kerosene, rolling tightly and shutting up over night in a close box or bucket). The fresh atmosphere of the room after this cleaning amply repays the trouble of doing it several times during the winter. Of course, this is only necessary in a much used room.

Mrs. V. H., Duffy, W. Va.—Having tried nearly all kinds of carpets, and many kinds not giving satisfaction, I am now using a carpet of Graxnite. The colors have been carefully selected and will retain their brightness unusually long, and having a strong, heavy cotton chain makes a good, durable, long wearing carpet. But for bed rooms I like matting, as it is so easily cleaned. I also make rag rugs, using most all kinds of cloth. Old woolen garments make nice rugs. I braid and sew the strips in any shape desired, and I knit them, using two large wooden needles, and it only takes a short time to knit a large rug.

The Congoleum rugs are used in dining room and kitchen. I use a lining of burlap sacks, and also a covering of newspapers over the sacks.

Mrs. H. L. P., Needmore, Pa.—I think a rug makes a much better floor covering than carpet. They are much more sanitary than a carpet in a room which is used a great deal. When the rug becomes dusty we can take it up and clean it without so much trouble, where if it was a carpet we would be much more likely to leave it down till house cleaning time, because it takes so much more time and trouble to take it up and put down again.

When a rug becomes worn, if it is taken up and turned end for end, it lasts much longer. And then when it becomes worn where it has been changed it can sometimes be put in a bed room and some small home-made rugs laid over the worn places and it will last a long time. Then when they finally are too badly worn for use any longer that way, they can be sent away to factories where they can be made over into a new rug at very little cost, compared to buying a new rug, and these are just like new.

Mrs. W. H. H., Prince George, Va.—I use all old, strong, clean rags which are not fit for any other purpose, in making small rugs to put in front of the dresser, washstand, and to put by the side of beds to step on in cold weather. The rags are first torn in strips about one inch wide, and always the longest way of the material, to save as much sewing as possible; then sew together and roll up into a large ball ready for crocheting. I use a large bone crochet needle. In sewing the strips together, put in or mix all colors along, as this will show up, or make a much prettier rug than having each color to itself. You can make the rugs as long or as wide as desired. I find such rugs are very handy, and besides, an excellent way to utilize otherwise worthless material.

Mrs. O. J., Rio, La.—I do not like carpets. There is more du-t, and the air is never so pure and fresh in a carpeted room as in rooms with uncovered floors that are kept scoured. They require occasional scrubbing, but the wear and tear of carpets will more than pay for it. They may be stained and varnished, or painted. Linoleum is nice for kitchen or dining room, and if given a semi-annual coat of varnish its usefulness will be prolonged. We turned a worn-out linoleum over and gave it two coats of drab floor paint, and it is giving satisfaction.

I like plenty of rugs, which may be dragged out, aired and beaten while the floors are being swept. I prefer home-made ones, as they are more economical and durable. The best of these are woven on a loom, as rag carpets are, but I have knit, braided, hooked and crocheted dozens by hand. I use the finer rags for the front rooms, reserving the overalls and heavy work garments for the kitchen and back porch. In making knit rugs it is best to knit strips about 12 inches wide, as long as rug is wanted, and join with needles and coarse thread. Or knit a strip 3 inches wide, in plain quarter stitch, and sew around and around, holding strip sufficiently full to keep the work circular in shape. If too full it will ripple; if too tight it will cup.

I have a pretty rug, woven by hand. I made a frame the size of rug wanted, wound the strips on lengthwise, then threaded a long needle, which I made of wire, with strips and wove them under and over the ones in frame, exactly as a chair bottom is woven.

Miss M. E. F., Bridgeton, N. J.—As soon as one garment is worn out and can no longer do service as clothing we cut everything possible into carpet rags. We have saved our rags for a number of years, sewing the strips together and distributing the light and dark. The balls are wound tightly and topped with red. One ball will weave about one-quarter yard of carpet, and this makes the distribution of red come evenly over the carpet and gives it a bright touch of color.

Rugs may be made without cost if one has the time and will put forth the effort. The strips are braided or crocheted in round or oval shape. Rugs and carpets made from rags will last a long time. They may be washed and scrubbed and they always give the room a clean appearance. These floor coverings are a luxury these days, and are especially attractive in a colonial bed room with a four-poster bed, or in a living room with an open fire-place, rush bottom chairs, candlesticks and a sewing table.

Miss A. E. G., Buchanan, Va.—Possibly it will help someone to know what an enterprising young couple just starting on a farm for themselves, did with an ingrain carpet that was included with the furniture, bought along with the farm. The carpet was badly soiled in spots, but fairly good otherwise. It was taken up, ripped apart and washed in a good soapy warm suds with a vacuum washer. After rinsing and drying, the worn parts were cut out and the best pieces sewed together so they would come to the middle of a somewhat smaller room, care being taken to match the figures. The result is a fresh, new looking floor covering at a nominal cost, which one would never suspect had seen any but the lightest service.

We find a good quality printed linoleum (better than inlaid) a very satisfactory covering for the much used floors, especially when braided rugs (I use the four-strand method of braiding) are used where one must stand most, as otherwise the feet get cold, and besides, the rugs take the worst wear and can be replaced, thus lengthening the life of linoleum. If the strips for these rugs are cut rather wide, from men's old clothing, the work goes faster and the rugs, being thicker, lie flat on the floor instead of rolling up and becoming a nuisance rather than a comfort.

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A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER III—Continued.

Marise turned swiftly to the little coat and cap, lying on a chair. She had held her eyes away, longing to get her hands on them, but unwilling that any one should witness the moment. She knelt beside them, spreading them out so that she had before her the veritable sheath of her baby, and as her hands followed the little shape that seemed to lurk within, the old ache for Mary flamed in a passionate desire for her baby—not a grown, strange daughter, but her baby in her arms. She cradled the coat, rocked it against her breast, sobbed into its folds. All the cool training of years fell away. Her body was like a clock that had been stopped, and now, started again, went on inexorably from that hour, heedless of the time that had run by while it waited.

Mrs. Healy was a long time boiling her kettle. When she came back with the tray, she found Marise sitting stiffly on the sofa. Neither looked at the other as they drank their tea. Then, with the putting down of her cup, Mrs. Healy made the first move.

"Mrs. Jaffrey, Mary is your child. There's no question of that. But there's things I'd ask you to consider." Her voice was quiet and reasonable. Evidently she had used her half hour for hard thinking. "Mary in our way of living is just at the top of the tree. She's a leader. Girls come to her to tell them what to do, and the boys are after her like bees. Down at the office they think the world of her, and she loves her work, she's proud of it. She's a little queen. Now you take her away into your life—she don't know your ways. She's the equal of anybody on this earth, if I do say it—but in little things maybe she don't do and say just what you'd think right. And then you'd try to tell her better—isn't that true?"

Marise was tensely on guard. "I should be most tender of her feelings," she said.

"Yes, m'am, you would so. But the fact would be there that you wanted her different, and Mary's never been criticized. She's not used to that. She'll feel like she was being put down, and she'll not like it. She'll not be happy."

Hugh had said the same thing, and Marise recognized its force. "I will give up any idea of making her different," she promised gravely. "I will take her just as she is. That will be best."

Mrs. Healy bent forward, shaking a significant forefinger. "But will your friends take her so? Will their girls chum with her and their young men ask her out? Answer me that."

It was a hard question to meet. "Mary will make friends, wherever she is," Marise said. "I think in time, a very little time, she will adjust herself to new surroundings and find her way."

"And she's to leave all her old friends and see them no more?"

"No. Certainly not. They will be welcome to come all they like." Marise tried to speak heartily, but both women knew better.

"Ah, but will they do it?" was the triumphant answer. "They can lark about my kitchen here, and make fudge, and go off to the movies as they please—will it be like that at your place?"

Marise suddenly brushed aside argument, literally, with her hand. "Mrs. Healy, Mary is my child. I have been hunting her for sixteen years. I am sorry, deeply sorry for you—I'm sorry for her. But here we are. I have found my daughter."

The hard red showed again on Mrs. Healy's cheek-bones. "'Twas me that sat up with her, night after night, and saved her life because I wouldn't let her die—the doctor said 'twas my will that saved her. I didn't have my clothes off for days together. I gave her back her life."

"I have sat up with her, too," was the quiet answer. "Night after night, Mrs. Healy, I sat up with her, all alone, thinking, 'Is she alive? Is she ragged and dirty? Do they ill treat her?' Oh, I have sat up with her for sixteen lonely years!"

Mrs. Healy would not be moved. She folded defensive arms. "With the thought of her, yes; but she's grown into my child. She's mine now, not yours. She'll fling herself down on me like a pup. Can she do that to you, or will you frost the heart out of her? Tell me that."

Marise started up, anger in her deepened voice. "What are you asking? That I go away and give up my child? Make no claim to her?"

Mrs. Healy rose to her terrible height. "Why should you come here spoiling a happy home?" she cried violently. "What's Mary to you or you to Mary? You can set your mind at rest about her. She'll be well cared for, and my bit of property will keep her. Now, why can't you go back to your own life and leave us be? That's it—look down your nose like I was your servant—you'll look at Mary like that some day, and will she ever forgive you? She will not. You think I'm selfish, no doubt, but what are you? God knows, you're not thinking of Mary in all this. Not of her happiness. She's the happiest girl in the world right now. What do you want to come here for, spoiling everything? Oh, I sound angry, but it's plain sense I'm telling you. You'd best go home and stay there."

The woman towered over Marise, the loud voice was torture, the heat set the pictures on the walls swaying before her eyes. With a desperate hand at her temple, she turned and went out.

At first she walked blindly, anywhere, to get away; then, as the welcome cold steadied her senses, she awoke to the fact that she was being stared at. Passers-by even stopped, to get a longer look at the naked suffering in her face. It was horrible, as shameful as those dreams in which one goes publicly unclothed. To hide pain was the most imperative instinct of her being. She found a taxicab and shrank into its corner. Oh, the welcome shelter of home, its cool peace! Marise ran to it in spirit as a lost child runs to its mother.

On the hall table was a florist's box, breathing fragrance. Hugh had found that rare thing, violets with a true violet odor. There were penitent words written on his card, but Marise did not try to understand them; she had forgotten last night. She placed the violets beside her as she threw herself on the drawing-room couch—no other room was big enough for her need. Body and soul, she had come to the limit of exhaustion. In that moment, while the relief of being home was all that she could feel, she fell asleep.

Hour after hour she slept. The end of her search seemed to have relaxed the tension of years, and she slept as she had not since her girlhood, fathoms deep, broken to bits, every limb a separate dead weight. Usually a step past her door, the stirring of a curtain, roused her, but now Hannah could come in and stand anxiously beside her without troubling her rest. All day she lay there while Hannah watched and kept away sounds and wondered.

The room was nearly dark when Marise woke up. It was a long process, with many slippings back. First she was aware of an exquisite pleasantness; soon this defined itself as Hugh's violets and the freshness of the great beautiful room, newly precious to her, as if she had lately escaped from oppressive confinement. Then she felt a stirring warmth in her arms and breast, as though she had been holding her baby.

"I must have dreamed of Mary—" The thought had barely taken shape when the living truth was upon her. The long search was over. And Mary, found, was good and happy and beautiful; evil had not touched her, her life had been rich in love. There were no words for it but Mrs. Healy's cry—"Glory be to God!" Marise said it over and over—"Oh, glory be to God!" Evil and filth were still out there in the world, and she must struggle against them till she died, for the sake of all the children of men; but the dark pictures that had hung just back of every waking moment of her life could be torn down and swept out, for they had dealt with the body and soul of little Mary Jaffrey.

"You're awake, m'am?" Hannah had forgotten the morning's grievance, and her tone was solicitous. She carried a tray. "I was going to take the liberty of waking you up, for I got uneasy."

Marise looked remotely at the dim shape, then, as the odor of fresh toast reached her, she abruptly sat up.

"Why, Hannah, I am starved," she said. Her voice was like a girl's; a note of laughter thrilled in it, a singing richness. She felt Hannah's stare, and tried to rub the betraying gladness out of her face with her palms. She was not ready to tell any one yet, not even Hugh. "Light only the candles," she said. "My eyes aren't really open. I didn't sleep at all last night, not one moment, but I seem to have made up for it. Thank you, Hannah—this is so good. You do take beautiful care of me." Her voice had run away with her again; it fairly caroled. Hannah's glance fell on the violets, and a look of shocked intelligence froze her Victorian features. She left the room without answering.

All her life Marise was to remember the next half-hour. There was darkness behind it, difficulty ahead, but for this little space she knew what is called ecstasy. The old bad dream was gone, and the reality set her in a flood of sunlight, woke all the music of the world, from the woods to the cathedrals, melted the hard mold into which she had forced her being and let it stream out into the living universe. The very hunger of her body, the goodness of tea and toast, were part of the rapture. The violets made her cry with their deliciousness. The thought of telling Hugh brought the tenderest laughter. All her senses were stirring, and the forgotten pulse of youth was beating out the measure that she had moved to before the clock had stopped. For her child was found, found good and happy. Oh, glory be to God!

She had not noticed the door-bell or Hannah's muttered announcement, but, suddenly aware of a shadow, she looked up to find Mrs. Healy standing over her. The candles in the tall iron standard showed a tragic face, and Marise, not knowing whether she had come in peace or in war, waited for her to speak.

Mrs. Healy sank into a chair as though she had taken the last possible step. "You're right," she said heavily. "I was a fool."

"Ah, I'm sorry, I'm sorry!" Marise spoke in a deepened voice, a warm hand held out, and Mrs. Healy looked at her in dull surprise.

"You can't help it," she said shortly. "There's no help for it now on all this green earth. It's started, and it's got to go on. She's your child, and I couldn't keep it from her. There's the point. She's got to know." Her chin sank on her breast. Her bigness seemed to make her grief colossal, and Marise could find no comfort to offer.

"She can take her choice," Mrs. Healy presently went on. "She's free. She loves me dearly, but she's a girl, and you're a fine lady in a grand home, and with the romance and all—well, it's easy to see which way she'll go. I don't blame her. She'd be happier as she is, but the poor child can't know it. She'll choose you."

Marise had only a perplexed frown for that. When mother and child found each other, how could there be any question of choice? But the woman was desperately unhappy, and needed all possible patience.

"Mrs. Healy, you won't lose Mary's love, you can't," she began, but the other cut her short.

"Can you share your husband with another wife? Then no more can you share your child with another mother. She's mine or she's yours. Oh, she'll come to see me, I've no doubt, and bring me fine presents, but there'll be nothing I can do for her. And I've done for her day and night, I've made every stitch she wears, made it fine and nice, and her shirt-waists always sweet and fresh, so that they speak of it at the office—she's never lacked what I could give her. Now I'll go home and fold my hands. It's over."

"But you have had sixteen years of happiness," Marise reminded her, very gently, "while I have been—" she broke off with a shiver. "Doesn't that mean anything to you?"

"No more than it would mean to you, Mrs. Jaffrey, if the light of your life was taken from you. No woman ever yet stood by her child's coffin and said, 'Well, I've had sixteen years of her, so I'm content.'"

"Not when it was death," Marise assented. "But suppose Mary had married? That must have happened, sooner or later, and she would have gone from your house then."

Mrs. Healy had only contempt for such feeble arguments. "How far would she go? To the flat above. When we found it was empty, she made a joke of it—she must marry soon, so it wouldn't get taken by any one else. She was fooling about it last Sunday night with Henry Martin, and they went up to look at it for the joke of the thing. 'I'll never go any farther than that from mama,' she said. And then I'd have had her babies to do for. Oh, you think I'm selfish, but you pull away a piece of the living flesh, and there'll be crying. Don't offer me comfort, for there's none."

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"Oh, I wish there were," said Marise miserably. "When I think of what you have been to my poor baby—Mrs. Healy, I could go on my knees to you in gratitude. It is a horrible return, to hurt you like this."

Mrs. Healy was beyond the reach of words. "You'll have to tell her, that's all," she said, rising. "I can't. I can't do it. I'll send her to you tonight, after her dinner. You can tell her what you please." And she went out, leaving Marise to feel humbled and wretchedly inadequate.

"Why couldn't I have met her in some bigger way?" she tormented herself. "Her selfishness was finer than my sympathy—it could let go, it could fill the whole room. It was like something in the Bible. Lamentations. And I could only say stupid little sentences about Mary's love. What was the matter?"

She thought that she had failed in pity and in kindness, not seeing that it was the pity and the kindness that were at fault. Only human equality could have helped. If Marise could have shown the depths of her own past suffering, forced Mrs. Healy to see her side, wrestled with her, shouted at her till she heard, they would have parted sisters; but she had hidden for so long, she did not know how to let go. Hugh's candid hostility to the proletariat was more truly democratic than her kindness, for he did not hide himself. Marise did not recognize this, but she felt that he would have done better than she had, and longed to run to him for help. It did not occur to her, however, to thank him for the violets.

After dinner Hugh called her up, but it was time for Mary to be there, and she could not go to the telephone.

"I can't talk to any one," she said obviously. "I am expecting a girl to see me, Hannah. Don't admit any one else." And she went on pacing the big room, trying to control her fever of impatience.

Years ago, when she had learned to bear suspense, learned to close up her heart and sit stoically through interminable journeys, following some clue that might lead to her child, Marise had acquired a formula: "It will be true or it won't; nothing I feel now can make it different, so suppose I stop feeling." It had taught her a specious quiet, and tonight, from old habit, she turned to it; then she broke off, flung it away forever. "It is true, and nothing I feel can undo it—so suppose I feel to the very depths!" she cried. The old "I must not!" was outworn, too. "Why mustn't I? Mary is found!"

And yet she presently needed all her patience, for the evening was passing, and Mary did not come. She might have worked late at the office; the idea helped for a little while. Then nine o'clock struck, and half past, and Marise grew frightened. At first she thought only of the daily accidents in the city streets. Then an absurd vision of Mrs. Healy, respectable property owner though she was, packing a bag and disappearing with the girl, rose to torment her. She could not keep it argued down.

"If Mary is not here by ten, I will go there," she decided, and watched the clock. It was five minutes before ten when the door-bell rang.

Marise wanted to run to the door, but she literally could not do it. She could only cling to a chair-back and wait. There were sounds in the hall, an opening door, a slow step. Then Mary came between the portieres, stopping short as they fell together behind her.

She must have cried terribly, for her face was distorted, her lids swollen and fiery, but that was well over; her mouth had a firm, even a grim line, and her eyes looked straight into her mother's. For sixteen years Marise had lived and re-lived this moment, when she should start forward to receive her child, and the joy of the dream came to help her now, reminding her that she must be warm and glad, and not the paralyzed empty thing that she felt. When she had crossed the big room and laid her hands on her child's shoulders, it began a little to come true. Her heart quivered into life.

"My little girl," she said, and laid her cheek very gently against Mary's.

The girl stood motionless and unresponsive, sullen even, and Marise had to crush down her rising tenderness, dreading to frighten and repel. Mary had not been looking for her all these years! She kissed her forehead and drew her over to the couch.

"I see that you know," she said.

Mary's lips were unlocked with difficulty. "Yes. I made mama tell me," she jerked out, sitting physically contracted, as though in terror of some bodily demand. Marise moved from the couch to the chair opposite.

"It must have been a dreadful shock," she admitted, trying to win confidence by quiet speech; but she had overestimated her own strength. She could not go on. Mary could not or would not help. When the silence had grown unbearable, Marise lifted her head and began again. "You understand . . . how it happened? And I didn't know you at once . . . that is the strange thing. Not to know you! It was only at the second visit that I . . ."

Mary was not listening. She had come to deliver some speech that needed all her will and courage, and she was visibly preparing them. Dread of what it might be drove Marise on.

"It was strange that you should have brought May Laguna to me;" she was pleading with Mary to remember all that joyous romance. "It was like something in a story, then. But when it is true, and happens to yourself, the story feeling . . . Mary, it is true! It seems unbelievable, but we must learn to believe it. Oh, I know—"

"Mrs. Jaffrey," Mary broke in, her voice wooden with the effort, "I came to tell you that—that it doesn't matter if it is true. I can't leave mama. She's my real mother. I like my home, I like my own life. I don't want any change."

Marise had tried to face every human possibility, but never once had she thought of this—that her child might refuse her. Mary must have seen the white shock in her face, for her voice rose defiantly as she plunged on.

"I can't help it. It's just plain deserting mama, and I can't do it. If you'd seen her—! She tells me to—she's game, all right. We've been at it all evening. Oh, we've had an awful time. I don't see any reason that I have to. I wouldn't be any comfort to you, Mrs. Jaffrey—a rough-neck like me. Why can't you just let us alone?"

The long years of hiding gave Marise what she believed was priceless help. After a blind moment, she gathered herself together and spoke as quietly and reasonably as though she had been a judge on the bench. Self-control was to her the first law of conduct, and she did not suspect how frosty and aloof she seemed. If she could have uttered her hurt and her longing, she must have broken down a barrier that was half bewilderment; but she hid herself and talked of Mary.

"I have no least idea of trying to coerce you," she said; "but before you make so big a decision, you ought to consider a little more. There are sides of life that you haven't seen yet. I think you ought to give yourself a chance to know what you are refusing."

"If I don't know, I'll never miss it," said Mary hotly. "That's what mama keeps saying—I'll blame her later. It's all rot."

"If you are so sure of yourself, you need not be afraid to come," Marise argued. "Suppose you spend a month with me—"

Mary's head jerked up. "And let my job go!"

"Not if you don't want to. Certainly not. You can go down to your office every day just as usual, if you prefer."

"Would people have to know it?"

"Not necessarily."

Mary wavered, then burst out unhappily: "But what's the sense? I tell you, I've made my decision!"

"Don't you perhaps owe me a little something, Mary?"

The girl looked startled, and waited for an explanation.

"You were my own child, my very dear baby;" Marise still kept her fatally controlled voice, and she sat as erect as a lady making a call. "Since you disappeared, every moment of my life has been given up to finding you. I have suffered—suffered a great deal, you know. Looking for you has been my whole life. I think perhaps you owe me—well, say a month. It is natural that I should want to make friends with you, isn't it?"

"I get you," Mary admitted heavily. "Only, mama is just all busted to bits, while you—" She paused, and Marise smiled a little.

"Perhaps I am busted, too," she said.

Mary flushed and frowned. "Oh, I know I talk like a mutt," she flared up. "I don't care if I do. I don't care about talking any different."

She got up, and Marise, rising, laid a hand on her shoulder.

"Don't fight me, Mary," she said, and the greater wisdom of nature, breaking through her control, put a tremor in her voice. "I don't want to change you. I only want to—come a little closer to my child." Then she put down the tremor. "You were the dearest baby," she went on with smiling lightness, her arm just touching the girl's shoulders as they moved to the door. "Obstreperous, but so loving. You adored your Mardie. I'll show you the old dolly that you used to take to bed every night—don't you remember Doodoo at all? Of course, you were too little. I will tell you all about everything when you come.

The human girl in Mary must have been tempted, for she answered with gratuitous roughness: "I couldn't stand a month. I'd go crazy."

"For a week, then?"

They looked into each other's eyes, but Marise saw only unwillingness, and she kept her surface so smooth that Mary could have seen nothing at all. Neither dreamed that the other held back a very river of tears.

"Well, all right," said Mary. "But you understand, I belong to mama."

"I quite understand," said Marise, and just touched Mary's cheek with her lips. "I will expect you to-morrow night, then? In time for dinner?"

"And we won't tell people," Mary insisted. "Well, good night, Mrs. Jaffrey. It's a queer world, isn't it?"

"Yes, very queer," said Marise, and the door closed between them.

(To be continued)

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32x4	8.75	2.45	35x5	12.25	3.20
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Investigating Marketing Costs

For the first time in this country, so far as is known, a comprehensive effort is being made to secure detailed and accurate information on the costs of marketing. Hitherto investigations of this nature have either been very limited in scope or have contained such a large element of estimate as to make the figures secured practically valueless. But the Bureau of Markets, United States Department of Agriculture, in undertaking an investigation into the costs of marketing farm products, has approached the subject in a manner calculated to bring forth complete and authentic information upon which can be based intelligent reasoning as to what reforms or changes may be needed in the system of marketing.

Only two of the many farm products have been selected for study at this time—milk and potatoes. Dr. Lewis H. Haney, who is in immediate charge of the work, is basing his results on actual cost figures connected with the handling of potatoes and milk from the producer straight through to the ultimate consumer: Figures capable of reconciliation with a profit-and-loss statement of the business concerns from which they are obtained. Rather than put out anything short of absolutely accurate estimates, the bureau will limit the number of cases reported on.

"The co-operation we are receiving from the dealers is very gratifying, and is, indeed, a paramount feature of our work," says George Livingston, Chief of the Bureau of Markets. "Without this splendid co-operation our investigations would be much more difficult to conduct.

"The Cost of Marketing Division of the Bureau began active work last June and already has gathered reports covering a considerable number of potato dealers. The milk investigation is likewise proceeding with satisfactory speed. I am certain that the Cost of Marketing Division will, when its work is completed, have information of real value to give to the public. Certainly no investigation could be conducted which is of greater concern to everyone—producer, dealer and consumer. There is no subject upon which the public more greatly desires enlightenment, or is more richly entitled to it."

While securing cost figures, the bureau is also ascertaining the prices paid for the chief kinds of materials and supplies used in the marketing system for potatoes and milk, as well as complete data concerning the wages paid to all those engaged in the work of distribution.

One of the principal reasons that milk was chosen as one of the first commodities to receive attention is that it is practically the only farm product which has but one step from producer to consumer. Another is the widespread agitation in nearly all sections of the country concerning the prices of this important article of food. Moreover, the milk trade in its broadest aspect includes business ranging all the way from simple trading to highly specialized manufacturing.

Potatoes were chosen because no other farm product is regarded as a more staple food, and because nearly every person in the land eats potatoes once, twice, or even three times a day. In addition to this the marketing of potatoes involves many steps. Perhaps few farm-raised commodities are handled as often before reaching the consumer.

The work on potato marketing costs is being actively conducted at Boston and Chicago. Bureau representatives at Boston will cover the Maine crop, and those at Chicago will study the output of Wisconsin and Michigan. A further effort will be made to secure accurate data on the costs of marketing Colorado and Idaho potatoes through Kansas City Dealers.

Among other items connected with the investigational work on potatoes especial attention is being paid to "shrinkage," the object being to secure accurate data which will enable the bureau to say in dollars and cents just what this item amounts to. Several cases have been reported in which the "shrinkage" on a car of bulk potatoes runs as high as 9 per cent. The usual estimate by those in the trade, however, is that 3 per cent. "shrinkage" is normal. This amounts to about 1200 lbs. per carload. The "shrinkage" is less when potatoes are sacked, as pilfering and rough handling are by this means reduced to a minimum.

Another item of importance in potato shipments is that of foreign matter, principally dirt. Complaints have been received from the Chicago territory concerning the large amount of dirt found, one dealer claiming that each sack of potatoes from certain producing sections has contained from 10 to 15 pounds of soil.

In carrying out the investigation into milk marketing costs, a special intensive study is being made of the milk situation at Columbus, Ohio, where the milk dealers claim to be crushed between high prices charged by producers and low prices paid by consumers. In addition, a questionnaire has been sent out to a large number of dealers scattered over the country. It is planned, also, to make intensive studies in certain representative cities similar to the study now being made at Columbus. From the information gathered thus far it is apparent that milk dealers in many communities are injuriously affected by two kinds of uneconomic competition. On the one hand, there are many small one-wagon dealers who do not keep any records of their costs and who are satisfied if they make wages for themselves. On the other hand, there frequently will be in a community a large concern which has a capacity in excess of the business it is doing and which, as a consequence, is endeavoring by heavy advertising and by making concessions in credit and price to increase its volume. This disturbs conditions and causes loss to those dealing on a sound basis.

The Bureau of Markets believes that an accurate presentation of the actual cost of marketing milk will make for more reasonable competition in the industry and will set at rest the fears of both the producers and the consumers.

Chautauquas and the Average Farmer

SMITH C. MC GREGOR.

Does the average Chautauqua benefit the average farmer? Yes, if co-operation is given by the farmer; no, if he regards it as an amusement only.

Amusement is, it is true, one feature of the average Chautauqua program, but the greatest value they can offer is that of instructive entertainment. There is a difference between the average amusement and one that also furnishes instruction on important phases of our daily life.

Farmers, in many cases, go long distances to attend Chautauqua entertainments. They naturally expect something worth while, something that will make them better farmers and citizens. That is, the successful, intelligent farmers do; the ones who know it all go because it is a "show." This latter group is loudest in complaints. You hear them say: "It was all right for the town folks, but it didn't do me any good." That is entirely right—it didn't do them any good. They did not use their common sense and brains to figure out that a problem that applies to one group of people can be adapted to the needs of another group. Philosophy and human nature can be applied to any group of people.

The successful farmer can be picked out in the Chautauqua audience. He is using his head and is constantly applying the illustrations to his own problems—that is one big reason why he is successful. The know-it-all criticises the things he can't understand.

Chautauquas offer a big field of help for the farmer in the future, but to get the most from them the farmer should offer a little co-operation and help instead of hinder. Chautauquas, indirectly, offer an aid in keeping the children on the farm. Young folks crave for entertainment, and if it is entertainment that encourages thought and education, it cannot be helped too much. So, after all, the average farmer gets out of a Chautauqua just as much as he puts in it. And that is true of most of the worth while things of life.

New York.

WHERE THE BIG STONE WAS

EDGAR L. VINCENT

MY FATHER thought when he was moving a great boulder out of the meadow on his farm that the shining particles he found on the bottom of the rock looked like gold. He carefully gathered up a bit of the dust and took it to a jeweler for analysis. But when the report came back it proved that the shining particles were not gold at all. He might have ground the boulder into atoms, tiring himself out and spending his time for many a day, and at the last he would have had nothing to show for what he had done.

But father drew the big rock out of the meadow, together with many others that were in the way when he bought the place; and right where the stones had been, he grew corn taller than the tallest man's head and beautiful crimson clover. This was his gold mine after all. The glittering dust, even had it been gold, would soon have slipped through his fingers and been lost; but now, year after year, the soft, mellow earth where the rocks once lay will give back richer treasures of corn and wheat and clover than the money ever could have bought.

Are we disappointed when our shining plans turn out to be nothing but stone? God has something better in store for us. Keep a brave heart and reach out to take it.

A Practical Fair Exhibit

That forests serve other useful purposes than to provide lumber, paper and "silk" stockings was demonstrated at the New York State Fair at Syracuse by a little model which was surrounded most of the time by curious and interested observers.

The model was exhibited by the forestry department of the state college of agriculture and was intended to show the effect of erosion on denuded hillsides. This exhibit consisted of a miniature representation of two hillsides with a pond or lake below each one. Both of these hills were constructed of the same kind of soil. One, however, was covered with tree growth while the other was left bare as if it had been denuded by careless and wasteful lumbering.

From sprinklers above, it was so arranged that water fell in the form of rain both upon the forest-clad and upon the barren hill. The model demonstrated clearly to observers that the water which flows from the forested hill goes off slowly and gradually and will continue to flow for some time after the rain has ceased. From the bare hill it flows off rapidly, forms gulleys, and takes a great deal of soil with it. The ponds below each hill in the model were respectively clear and muddy and at frequent intervals the pond or reservoir below the deforested hill filled up with silt washed down by the rain. Other phases of forest work were shown but the chief interest centered on this erosion model.

Farm and Home Facts

Pack up that binder in a tight dry shed
And paint, paint, paint!

All of which applies equally to mowers, reapers, tractors, plows and everything that dampness and winter snows can injure.

Play aprons for children are an old-fashioned economy worth reviving.

Two or three tablespoonfuls of preserved or ginger pears are a delicious addition to apple pie.

As fall comes on and the sitting room replaces the porch as a family gathering place, take a look around and see if a little fresh paint, bright cretonne and the shifting about of pictures and furniture won't help to make it more cozy, livable and homelike.

Only when the amount which would have been spent for new material is saved, is it economy to spend valuable time making over old garments.

October Live Stock Rations Suggested

The following are the live stock rations for October, suggested by the animal husbandry workers at the State College of Agriculture at Ithaca, N. Y. In the case of the dairy cow ration the approximate wholesale cost is also given.

For dairy cows, 200 pounds ground oats or barley, $4.78; 100 pounds wheat bran, $2.39; 200 pounds hominy or corn meal, $5.72; 200 pounds oil meal or cotton seed meal, $6.02; 300 pounds gluten feed, $8.88; 1000 pounds will cost $27.79; 100 pounds will cost $2.78; 2000 pounds will cost $55.58.

For calves and young stock, 300 pounds hominy or corn meal, 300 pounds wheat bran, 100 pounds oil meal, 300 pounds ground oats.

Since the high protein feeds have a much greater manurial value than the low protein feeds, use of as much high protein feed in the ration as cost and the health of the animal will permit is advised.

How They Do It In Brazil

Striking comparisons between the stock at the National Live Stock Exposition of Brazil and typical large live stock shows in the United States are contained in an official report to the United States Department of Agriculture from its two live stock commissioners now in South America. These men are L. B. Burk of the Bureau of Markets, and E. Z. Russell of the Bureau of Animal Industry. The exposition was held July 4 to July 11 at Rio de Janeiro, Brazil, and is the principal annual event of its kind. It is managed by the National Society of Agriculture, an association financed partly by the government and partly by membership. Approximately 5000 members pay a fee of $5 annually. The exposition is strictly a live stock show; no other exhibits are on the grounds. Following is an extract of the report:

"The principal attraction was the cattle division in which there were about 700 head. The Zebu breed leads in numbers and popularity, there being about 300 of these animals on the grounds. Other breeds shown were Herefords, Short-Horns, Aberdeen-Angus, Red Polled, Brown Swiss, Holsteins, Jersey, Dutch Belted, Guernsey, Devon and the native Caracuo. A few splendid individuals of each of these breeds were shown, but there were also many common ones.

"The Caracuo or National cattle were represented by excellent individuals, and they were in good condition. The bulls were very heavy in bone and would weigh about 2000 pounds, the cows weighing about 1400. They are coarse in quality, but are hardy and produce very good beef. In type they resemble more nearly the Short-Horn breed, but are somewhat longer in body and coarser in quality of head and bone. They have long, coarse horns and are of a reddish-faun color.

"There was a total of 147 hogs on the grounds, divided among breeds as follows: Duroc-Jersey, 69; Poland-China, 28; National, or native breed, 14; Large Blacks, 11; Berkshires, 10; Crossbreds, 8; Barrows (crossbreds), 6; Spotted Poland-China, 1.

"The best individuals were found in the Durocs, some very creditable animals being shown. Some of them had been brought from the States; others were home-bred from imported sires and sows. The grand champion animal was a Duroc-Jersey yearling boar, shown by the Lavras Agricultural College. He was home-bred from imported parents and sold for $500.

"Hogs of the National or native breed are either red or black. If they are given time enough, they make a good weight. Some barrows or stags were shown weighing about 800 pounds. Generally they are of fair length, sway-backed, rough head, poor eyes, bones of medium size, and poor feet. They are fairly prolific, but are not breeding true to any type or color.

"The Large Blacks were of fair size, smooth, a coarse head with ears pointed and coming to the end of the nose. They are generally well developed in the back, and are of good depth. The Crossbreds were a mixture of the Nationals, Duroc-Jerseys and Poland-Chinas, yet in quality they ranked ahead of many of the others except the Durocs and Poland-Chinas.

"The attendance at the show was not large, and interest centered around the cattle much more than around the hogs. It was exactly as it used to be in the shows in the States in the earlier days. A large proportion of the attendance was composed of city people, which is not to be wondered at when one considers that on many of the lines of railroads they have train service but every other day.

"The horse part of the show was very small compared with shows in the States. There were a few small stallions, evidently grades. The horses raised are for saddle purposes. A few mules were shown of the size and quality used on the streets.

"There were about one-half dozen Lincoln sheep of good quality. The sheep business does not seem to be developed to any great extent in the region near Rio de Janeiro."

What Makes a Runt?

A plump little pig is a porker
But a puny pig is a runt.

It is strange that breeders have not made a more extensive study of the runt animal than is indicated in these two lines, but the truth is that no one knows exactly why the runt appears among our domestic animals. The United States Department of Agriculture has set itself to the task of finding out how often the runt occurs and what are the causes of his appearance. As a base upon which to build the runt investigation, the Bureau of Animal Industry is asking 1000 prominent American breeders to contribute all that they have learned about the dwarfed animal.

Through effort and study many phases of breeding have come to the point of science. There are other mysteries that still baffle investigators. The Department of Agriculture does not consider the runt question unsolvable.

Is the runt an unavoidable result of a natural law or is it chiefly the product of careless breeding, of poor feeding, or of neglect to protect it from parasites and disease? The Department of Agriculture proposes to find out, and the Bureau of Animal Industry is preparing to conduct a campaign against it.

A questionnaire has been sent out to American breeders upon which they are asked to submit their own observations and deductions. The results will be compared with data which the bureau has been gathering from experiments and other sources. It is already known that certain conditions of feeding and breeding will tend to produce a runt, but information to enable one to guard against these conditions is needed, and it is hoped that the breeders will be able to assist in solving these problems through their experiences. The elimination of the runt, or a decrease in his numbers, is aimed at by the Bureau of Animal Industry in connection with the "Better Sires—Better Stock" movement. There is never so much profit in a runt as in a normal individual. The runt requires more care and as much barn room as any other animal, while the inferior quality of its flesh gives it a lower market value. Undoubtedly a large amount of money is lost by the farmers every year on account of feeding and caring for runts. The questionnaire is reproduced below. Any breeder who does not receive a copy direct from the bureau is urged to take the questions from this announcement and answer them. The more replies the more valuable will be the results of this study. Your letter to the Bureau of Animal Industry will be welcomed. The questions follow:

1. From your experience, in what classes of live stock do the most runts appear (horses, cattle, hogs, sheep, etc.)?

2. How many of your farm animals (excluding poultry), on the basis of every 100 born, are runty, undersized, or of inferior development?

3. Mark the three principal causes, in your opinion, of runty stock:
   - Inferior breeding.
   - Parasites (lice, worms, etc.)
   - Contagious disease.
   - Inadequate or unsuitable feed.
   - Lack of adequate housing or care.
   - Exposure.
   - Accident.
   - Other causes (mention the most important.)

4. In what stage of the animal's development (infancy or before weaning, shortly after weaning, or later) does runtiness chiefly begin?

5. In your experience what are the most practical ways of preventing runts? Give details.

6. Does it pay to try to raise runts to market size?

7. To what extent would your financial returns from live stock be increased if you had no runts? (1-5, 1-10, 1-20 or other fraction or percentage).

8. Make comments stating whether you believe runty live stock can be reduced in numbers and give actual instances in which animals which showed runty indications developed into normal size.

9. Give the proportion of runts in your poultry flock. Mention the chief cause and best prevention.

Address your letter containing the foregoing information to the Bureau of Animal Industry, United States Department of Agriculture, Washington, D. C.

Sweet potatoes make a superior table and cooking syrup, say chemists of the United States Department of Agriculture. Thus far no large commercial use has been made of the discovery. The department is prepared to tell how to make sweet-potato syrup at home and how to use it in cookery and candy making.

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Then we have recently got out another we call our Fashion book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with prices; also fur garments remodeled and repaired.
You can have either book by sending your correct address naming which, or both books if you need both. Address
The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y.

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Chester White pigs, sows, gilts, open or bred, also service boars. Write for prices.
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W. F. McSPARRAN, Furnace, Pa.

Fixing the Price by Costs

"The average cost of production should not be taken as the basis from which fair prices may be determined, according to R. F. Taber of the Ohio State University. War experience shows that a price sufficient to cover the cost of from 85 to 90 per cent. of the producers is usually necessary. Great variation exists in the cost of producing various commodities between different producers, due to diversity of conditions and efficiency of production," he points out.

"A recent report of the Federal Trades Commission shows a variation in the cost of coke production among a large number of producers, between a low cost of $2.64 per ton and a high of $7.06, or a gross variation of 300 per cent. An investigation among 842 cotton growers in the South showed a gross range from 8 cents per pound to $1.07. The cost of producing a bushel of wheat in Crawford Co., O., in 1919 varied from 87 cents to $2.98, according to records collected by the Ohio State University. U. S. Department of Agriculture figures on the cost of growing spring and winter wheat in the Great Plains area showed a variation of $1 to $5 a bushel.

"A price based on the average cost of production is at once seen to be impossible, since practically 50 per cent. of the producers under such a scheme would lose and would be compelled to cease production.

"In order to determine a fair price, the extreme variations in production costs among the producers in the particular business should be learned. This price over a long term of years must be high enough to assure profitable production to enough producers to insure the amount of commodity needed. The price naturally would cover the costs of the bulk of the producers.

Save Labor in Washing Dishes

Dishwashing takes more of mother's time than ever when the children are back at school. To help make this work easier and more quickly done, Mrs. J. C. Walker of the home economics extension of the University of Wisconsin, offers these hints:

"Make a wheeled tray by putting ball bearing castors on the legs of a small table. This may be used to save steps in carrying dishes from dining table to kitchen. If the dishes are scraped and stacked before being put on the tray than can be taken out in one trip.

"A shallow draining pan with a wire rack to hold the dishes is a great help. (These are inexpensive and can be bought at any hardware store.) Boiling water is poured over the dishes after they are arranged in the rack and they are left to stand until dry.

"Plenty of hot, soapy water makes dishwashing easier. A long-handled dish mop is useful and inexpensive because with it one can use hotter water than the hands could bear. The mop also simplifies the cleaning of long-necked dishes. A wire soap shaker will make a good suds and uses the small bits of soap that might otherwise be wasted. A wire dish cloth, or a mystic mit, will save time in the cleaning of kettles and pans.

"If dishes are washed at the kitchen table, the top should be non-absorbent and easily cleaned. The height of the table or sink should be such that stooping over while standing is not necessary. A few shelves over the kitchen table or sink are very handy.

"Arrange tables, sink, cupboards and stove so that the work of dish washing can be done with the least possible number of steps."

What One Dairyman Learned About HEBE

He had heard many conflicting stories regarding this new food product—some that it would injure and some that it would benefit the dairying industry. Desiring to form his opinion from facts rather than hearsay he started out to investigate. During the course of his investigation he called at the offices of the Hebe Company and asked some very searching questions.

"I have been told," he said, "that HEBE is being marketed as evaporated milk or a substitute for it. Is this so?"

"It is not," was the reply, "HEBE is produced, labeled, advertised and marketed as a distinctive dairy product for use in the home as a cooking and baking ingredient."

"But some dealers sell it as, or for evaporated milk" he objected.

"There are such cases of misrepresentation," was the reply, "but they are becoming fewer each day due to the widespread campaign of education which the Hebe Company is conducting by which the consumer is learning the exact nature and uses of HEBE and the dealer is being made to realize that his greatest profit lies in selling the product for just what it is." He was shown the methods employed by the Company to correct misrepresentation on the part of the distributor and misuse by the consumer. His attention was directed to the label which specifically states what HEBE is and its uses.

"Is not the real purpose of HEBE to develop a market for cocoanut fat rather than a market for skimmed milk?" he asked—

"Decidedly not," was the reply. "To make every hundred pounds of HEBE it takes 210 pounds of skimmed milk and only 7.8 pounds of cocoanut fat and this small amount of non-dairy ingredient is used for the sole purpose of supplying the large amount of dairy ingredient with the shortening and other elements necessary to make it desirable as a cooking medium. It is no more true that the skimmed milk is used as a vehicle to bring cocoanut fat to market than is it true that butter is used to bring salt or ice cream to bring gelatine to market. These non-dairy ingredients all serve the same purpose—to make the dairy ingredients better for the uses intended."

"How will the sale of HEBE benefit the dairy industry?" was the next question.

"By developing a human food market for skimmed milk" was the reply. Government reports were produced which showed that yearly over 30 billion pounds of skimmed milk was not finding its natural and most profitable market as a direct human food. The statements of government and other authorities were read to show the need of creating such a market if the dairy industry is to best serve humanity and itself. HEBE, it was pointed out, is one means to this end.

"How will this benefit all dairymen?" he next asked.

"That which benefits the industry as a whole must benefit each individual member," he was answered. "Every can of HEBE sold and every bit of advertising put out is helping to educate the public to a greater use of dairy products. The ice cream industry is a parallel case. Every dairyman, whether he ships his product to an ice cream factory or not benefits by the increased demand caused by the use of nearly 4 billion pounds of milk yearly by the ice cream manufacturers."

"Why are you advertising HEBE in the farm papers?" he asked.

"For no other purpose" he was told, "than to give other dairymen as we are giving here to you the facts of HEBE in its relation to the dairy industry so that these men may have a complete and accurate knowledge of the subject and form their opinion of our product and our company from facts and not from prejudice or from mis-statements on the part of wilful or uninformed persons."

At the close of the interview the dairyman visitor expressed his satisfaction at the frank and straightforward answers given to his questions and made this significant remark "If every dairyman who now sees in HEBE a menace to his business could have the opportunity of going into this subject with you as thoroughly as I have, I am sure he would see HEBE in an entirely different light."

We will be glad to discuss HEBE with any person interested, either by personal interview or by correspondence. Write for our booklet "The Missing Third" which discusses in detail the relation of HEBE to the dairying industry. Address 3059 Consumers Bldg., Chicago.

Chicago **THE HEBE COMPANY** Seattle

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The Practical Farmer

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The Pure-Bred Hen on the Farm

By J. RAYMOND KESSLER

THE view of the so-called professional poultryman with regard to the methods of raising and handling the hen on the farm is too often one of intolerance. However, in the writer's experience, much more of this attitude is found in the inexperienced would-be poultryman than with the seasoned, experienced man who has spent years in poultry raising as a specialty.

As one passes from year to year with poultry as a specialty and comes more in contact, as the writer has, with the average farm flock through marketing poultry products purchased from farms and through doing hatching for those owning farm flocks, one realizes more and more that there are a great many good points in the methods of the average farmer with regard to his poultry flock. At the same time there are many things the owner of the farm flock could adopt to advantage from the methods of the specialty poultryman. It is with this in view that the following suggestions for the improvement of the farm flock are offered. The methods outlined are not intended as a criticism of the farmer's methods, but merely what experience and observation have led the writer to believe would enable the owner to make his flock more profitable.

Naturally the first question to come up is that of pure-bred poultry versus mongrels. There has been a tendency on the part of farm folks to look on the hen of known breeding as a show bird, and a majority of farmers in speaking of such poultry refer to them as "fancy chickens." This has been one of the big reasons why the hen of good breeding has made so little progress on the average farm. It is because the farmer looks on her as a show bird, which he considers, and with some truth, as having little or no utility value. Chiefly this has been because the farmer has met the hen of pure blood lines principally in the show room of the county fair and rarely as a utility hen at work under farm conditions.

Very often efforts to rear a flock of a given breed have resulted in discouragement and a firmer conviction that the mongrel is the only fowl for the farm. Usually it has been a case of buying from some breeder a setting of his best eggs at a stiff price per setting, with the idea of breeding fancy fowls. The resultant chicks are usually given great attention until mature and then thrown in with the mongrel flock. The result is there is apparently no gain made. Then, too, where the farmer has met his favorite breed at home, it has usually been on the place of a poultry specialist where every facility is had and extraordinary care exercised for the welfare of the flock. Many then jump at the conclusion that such an environment is necessary to success with fowls of pure blood lines. This is absolutely a wrong point of view, for the hen of known breeding will live and thrive any place that the mongrel will, and what is more, she will make better use of the feed consumed.

We often hear the claim that pure-bred fowls do not have the ability to forage over the farm and shift for themselves as the mongrel must. Some will even cite cases where they have purchased grown, or partly grown, fowls of good blood and released them with the farm flock with the result that the fowls seemed lost, unable to look out for themselves, and in the end made a very poor showing alongside of the mongrel. This is just where the mistake is made in introducing pure-bred fowls on the farm, for, as a matter of fact, the ability to care for themselves is a matter of the way they have been reared, or, may we say, one of education in the life they must lead. In other words, the fowls raised under special conditions, with every want brought to them, cannot be expected to do well under changed conditions that the method of rearing has never taught them to anticipate.

Free range makes hardy fowls

The only successful way to introduce pure-bred fowls on the farm is to hatch and rear them on the farm. If a change to pure-bred fowls is desired, the best plan is to decide to rear a good sized flock of the breed desired and when they come to maturity have them and no others. In accomplishing this the farmer should not make the mistake of purchasing a few settings of eggs at an exceedingly high price, since it is not the show fowl that he wants, but the utility fowl of good blood lines. Several good breeders, advertising utility stock, should be selected, and, if possible, a visit made to their farms. A hundred or two of eggs should be ordered, if it is desired to rear a good sized flock, and these eggs secured as convenient for hatching at home in whatever manner has been followed in the past. If with hens, then continue with the hens for this hatching, and allow the chicks to be reared in the usual manner. If incubators and brooders have been used, it will, of course, be just as good and require less work. However, do not attempt hatching the new stock in a new way, for the results are likely to be disappointing and the pure-bred stock will most likely receive the blame.

Eggs in hundred lots, of pure-bred fowls of utility stock, should not cost more than two or three times the price fresh eggs sell for on the market. Eggs

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Breeding Sheep for Profit

R. B. RUSHING

SOME twenty years ago I bought a few good Cotswolds weighing about 200 pounds each, with lambs by their side, paying $5 per head for sheep and lambs. This was the last week in June. The following January and February lambs were dropped and the earliest bucks sold for "Easter lambs" at $4 apiece, weighing from 40 to 50 pounds each; lighter ones sold later on, about the time of new peas. This custom I have always kept up.

When sheep are left to their own natural inclinations they seem to bring forth their young in February, as a rule, but scatter along from December to June. The period of gestation is about 155 days. When lambs are born in winter they should have a dry, warm brood pen, but after two or three days they should be put in an airy pen connected with a sunny yard, and others expecting ewes put in the pen.

It is a good plan to trim a little of the wool from near the udder, so the little one can find the teat, for it has more vitality the first ten minutes of its life than ever after until it has filled its stomach. It is not always best to try to assist the little one by holding it up, as most of them seem to object to it. If lambs have got chilled before nursing, fill a gallon jug with warm water, wrap a sack around it and put it in a corn basket, then put the lamb in the basket and throw a horse blanket over it. They will soon revive and commence running around the jug, and soon are strong enough to put beside their mother.

Feeding sheep for breeding purposes should be done carefully. If they have fall grass, corn stalks, etc., do not feed any grain at all until lambs are dropped; then give each one about two pounds of carrots and a little shelled oats twice each day for the first week, and after that all she wants to eat of shelled corn, oats, carrots, buttermilk, potato and apple parings, straw, beets and corn stalks, with plenty of water, especially if there is no snow. There is no use of grinding any kind of grain for sheep.

Very often someone will tell you strange things—something they know nothing about. Some men will say you can turn sheep into a corn field and they will eat up only the weeds and clean up the vines, etc., but will not eat the corn. If anyone tells you that, don't believe him, but don't tell him he lies; ask him what a bunch of boys would do if they are sent into a patch of ripe melons to trim out a few big weeds. Sheep will certainly devour plantains and morning glories with a relish, and, in fact, nearly all weeds excepting thistles and cockleburrs. I always mow the weeds and grass in the roads and on and around the farm fence line, rake them up and stack in a suitable place, and throw them out in the winter on the snow or bare ground. They seem to like them, and devour them greedily.

If lambs are not born until grass time, and grass is good, no grain need ever be fed. A ewe is generally good for breeding as long as her teeth are good, and this is from six to eight years. Even at that age she will sell well to the butcher, though often objectionably fat. Cull well every season, after lambs have been sold or weaned, for even in a small flock there are usually some that are not desirable. Some bring poor and misshapen lambs, others are not good mothers. Others, after a few years, have such large teats that the lambs can hardly nurse, and some lose their udders from fever or other causes. These should be noted and taken to the shambles as soon as in good flesh. In this way you can keep a small flock looking well, of uniform size and desirable form, making it a pleasure to look at as well as increasing the profits. Such a flock can be handled with profit and pleasure.

Sheep do not tear down and root up pens and make mudholes, as hogs do. If a gate is left open or a bar down and they get out, a shrill whistle will generally bring them back. They will not run away if they get out of the road, and will rarely leave the fold at night, but at the earliest break of day will go to the pasture and return to the shed in the heated part of the day, going out again toward evening and remaining as long as it is light. For this reason there should be an unobstructed lane or runway from pasture to shed, for when sheep get started they run headlong and recklessly toward their shelters; therefore, if they were shut off they would become frantic even to the peril of their lives; but if there is a clear passage and they know it, they will never leave it.

It is not necessary to have expensive buildings for shelter; low sheds are good, rising to the south or east and boarded up about three or four feet in front, leaving the remaining space open. No weather

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The adaptability of the motor truck for every hauling requirement on the farm was brought forcibly home to hundreds of farmers in the west during the recent thousand mile tour of the Rocky Mountain Auto Trades Farm Development Tour, comprising more than a score of Colorado truck dealers. Actual demonstrations were made, live stock being hauled to market with virtually no shrinkage, wheat, both sacked and in bulk, was transported direct from the field to elevators in town. In fact, demonstrations of practically every type of work done by horses and wagons were made to show the advantages of motorized transportation on the farm.

Market Observations

WM. J. WATTS

THE farmer who has failed to study the spectacular markets during the last few years has missed many things he should know, or at least try to know. One of the most interesting instances is that of hides. They were very low at the beginning of the war, around ten cents, and when manufactured they made the highest priced shoes ever known. Then the price more than doubled for a year or more, but now is again down to the former low mark. Why do they fluctuate so much? Is it because the cattle raisers ask such varying prices, or because of the great changes in supply and demand? No, farmers do not ask a price, and the supply is very regular. The packers have the control and can cause a slump at any time by not buying. Then when the time is right they load up at the lowest figure. Wouldn't it be great sport to be able to fool them a few times?

It is generally known that the wool markets are in an unnatural condition now and have been during the war. There seems to be no way for the producers to know anything about the demand and they have never organized sufficiently to set a price and stand by it.

The western wheat growers are now in the same predicament and have quickly organized and stand firmly back of their price. A few victories by such farm organizations will undoubtedly give the needed encouragement and the good work will become more general. The wheat growers have already drawn fire from some of the largest newspapers. When the editors of such influential formers of public opinion condemn an effort to get cost of production plus a reasonable profit, and at the same time know that if the farmers do not get their own the speculators will get what is not their own, it is trying to the good faith of farmers.

It brings up the old question of whether our agriculture will be conducted by a submissive government fostered peasantry or a progressive self promoting business type of citizen who is able to bid on the same market with industries for labor and other necessities of a commercialized kind of business. It is for the farmers to decide. If they are willing to remain ignorant and subservient there are those who are very glad to receive the benefits, but if they demand a reasonable production cost plus a living profit and then stand back of the demand just as labor has gained recognition, there will no longer be need of rural uplift movements and all sorts of excuses pawned off on farmers in order to draw fat appropriations for direct benefit of Tom, Dick and Harry, and indirect benefit of farmers.

Pennsylvania.

Good kinds of green feeds for hens in winter, recommended by the United States Department of Agriculture, are sprouted oats, alfalfa meal, chopped alfalfa and clover hay, cabbages and mangel beets. Cabbages may be hung up in the poultry house; the beets are usually split and stuck on a nail on the side wall of the pen about a foot above the floor to keep the feed clean.

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NOVEMBER 1, 1920

PERFECT freedom to form opinions and absolute liberty to discuss candidly all matters pertaining to government are a precious birthright of the American people. Furthermore, we have a right to all the facts regarding public transactions and the way in which they have been handled. When a man becomes a candidate for office it is not only proper, but highly important, that his record should be carefully investigated and the fullest publicity given to such acts in both his public and private life as may determine his fitness to serve the people.

This is especially true when the highest office in the land is at stake and at a time like the present, when we need a good, strong hand at the helm to guide us through the many problems which await solution. But for the same reason the occasion is too serious for us to be influenced by anything but facts. It is a time for campaigning in the open with everything straightforward and above board, no matter how keen the contest.

It is deplorable that either party should resort to such contemptible tactics as are the subject of a long editorial in a recent issue of the Philadelphia Public Ledger. "Poison gas" these underhanded attacks are called. It seems that according to the Republican State Committee of Ohio, "paid emissaries are now employed to go from house to house spreading vile slander relative to the Republican candidate. From vest pockets are drawn statements which dare not be printed in the open. That they have no foundation in fact makes no difference." We are also told that "a very similar campaign of incredible libel is being conducted by the gutter brigade against Governor Cox."

We do not for a moment believe that the management or the better element of either party is responsible, or in fact, has anything to do with dastardly methods of this kind.

Another species of misrepresentation which we are sorry to see employed and which we supposed politics had outgrown, is where the words of a candidate on some former occasion are given, through incompleteness of quotation, a present significance which they do not possess. An instance of this is the attempt which has been made to make farmers believe that Senator Harding thinks dollar wheat at the present time would be profitable for them. The quotation employed, "Dollar wheat makes it a profitable occupation," is from a statement referring to the time, some years ago, when a dollar was a mighty good price for wheat and would bring rejoicing to the heart of any farmer. Since then our entire standard of values has changed. A dollar nowadays doesn't buy very much and isn't much like the old dollar—and labor is scarce and hard to get at any price. No man outside of a lunatic asylum would dare to think, much less say, he believed in dollar wheat now. And Senator Harding, it must be remembered, lives in the great wheat raising state of Ohio, and has, as he says, "followed the cradle and sweated behind the reaper when binding was a cross to bear."

Both parties have too much at stake to run the risk of having their fortunes wrecked by deliberate misstatements in regard to the history or views of their candidates.

Ten Dollars a Day

HERE'S a letter from a farmer friend which came to our desk a few days ago:

"My house and barn need paint, so I asked a man who is generally reasonable, what he would charge to do the work. His price was a dollar and a quarter an hour, which amounts to ten dollars for an eight-hour day. Can a farmer do better than swap jobs in such a case? Since I had a reliable ready mixed paint and no work so lucrative, the painter lost his chance at the ten spot per day and now I swing a brush while a three-dollar man cuts corn, digs potatoes and does general work on the same farm. The day has not arrived when a farm will support any kind of labor at ten dollars a day because people of other occupations are unwilling to return the favor in equivalent prices for farm produce. When men working in trades plant gardens, keep cows and chickens, it is very proper for me to paint, carpenter, etc."

That's good sound sense, isn't it? But things are going to be different soon, we believe. There's labor to spare in our cities right now, and laboring men who were independent, high-priced, lazy—but, with all, in demand—a short time ago, are beginning to see the signs of new times in a lack of keen desire on the part of employers to give them work at current wages, and a coincidental vacuum in their purses. Both wages and prices are in for an early readjustment, we earnestly believe.

The Bundle Ship

(Bearing America's Gifts to Armenia.)

Speed on thy way, fair bearer of our varied gifts;
Speed swiftly thither, where each wasted body lifts
Itself in anguished pain for cover 'gainst the blast
And grip of winter. Go, tell Armenia thou hast
Enough for all, the withered sire and forceless sons,
The mother and her babe. Tell them their grief has won
Compassion from America's great, feeling heart,
And that these offerings mean that this is but a part
Of what we have to give; if need arise, there's more
To send for their relief from our abundant store.
But part is this from that great robe of Christ, once thrown
O'er this sad world when all its woes He made His own.
For still the voice rings urgent here from East to West,
"Let not your ears be closed to my divine behest
To succor them that suffer, wheresoe'er ye find
Your fellows in distress; to none be ever blind
What'er their race; but from your rich o'flowing land
Dispense, likeminded with myself, with open hand.
So shall your nation hear the encomium divine,
'Ye gave to Me in giving to these least of Mine.'"
Sail on, good ship; thy course be under God's control
Till thou hast safely reached, unharmed, thy destined goal!

J. A. Mets, Sr., in Phila. Bulletin.

While the hopes and prayers of the whole country follow this good ship the news of its safe arrival will be awaited with paritcular eagerness by the people of this vicinity, who contributed about half of its precious cargo.

Reaching the Limit

WHEN the farmer who raises the wheat in a barrel of flour gets only $9.60 and the consumer pays $29 for the bread it makes there is something wrong in between. The same is true when a hide brings only $7.50 and a pair of shoes costs $15, or when the producer loses several cents a pound on his pork and the restaurant keeper charges anywhere from 50 cents to $1.00 for five or six little thin slices of bacon; and so on indefinitely.

The bad part of it is that the farmer at one end of the line and the consumer at the other end, seem to be the only ones who have cause for complaint. And then to make it even worse they try to satisfy the demand of the consumer for a lower cost of living by cutting down the farmer still further.

But there is a limit to all things, and we believe that the trend of events which are coming to the farmers' aid has been materially quickened of late. Prominent among these is the rapid progress which has been made in organization and co-operative movements. While farmers individually may not obtain their due recognition there is no question that agriculture as a whole, which feeds the world and which in this country represents an investment greater than railroads, manufacturing and mining combined, is all powerful.

Another hopeful sign is the concentrated study being given to marketing—both co-operative and through the regular channels. There is no question that "machinery for distribution" is necessary, but when the machinery becomes the main thing and absorbs most of the power, something is wrong.

Bulletin Helps for Farmers

Corn yields can be increased more surely and cheaply by the use of better seed than in any other way: The why and how of this statement is discussed and illustrated in "Better Seed Corn," Farmers' Bulletin No. 1175, just issued.

With the decrease in fur-bearing animals, due to increased demand, laws relating to hunting and trapping are becoming more strict in the various states and provinces. The United States Department of Agriculture has prepared a new summary of the laws on this subject in the United States, Canada and Newfoundland. It covers hunting, trapping, open seasons, propagation and bounties, and is known as Farmers' Bulletin No. 1165.

The right handling of the home forest has come to be a matter of recognized importance in farm management. The farm requires timber for building and repair, for posts, etc. Wood is needed for fuel. Woodland is required for protecting the soil against erosion on steep slopes, and for shelter for growing crops and live stock and a shield against the storms of winter and the dry winds of summer. Under the title, 'Forestry Lessons on Home Woodlands," (Bulletin No. 863) the Department of Agriculture has prepared a practical treatise which covers the subject very thoroughly.

"Planning the Farmstead" is the title of Farmers' Bulletin No. 1132, which has just been issued. Foresight is better than hindsight in planning the location and arrangement of the buildings on the farm. This discussion brings forward all the points to be considered. If you expect to locate new buildings this coming year, this bulletin is well worth reading.

Any of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

Many orchardists will be glad to know of a bulletin (No. 317) recently issued by the Agricultural Experiment Station of the University of Wisconsin (Madison), dealing with "Off-Year Apple Bearing;" its 32 pages, fully illustrated, are a considerable addition to the lore of the orchard.

Garden Notes for November

W. F. MASSEY

Cut the asparagus tops to the ground and burn them to prevent the seed from being scattered and filling the bed with seedlings. Then cover the whole bed thickly with stable manure mixed with acid phosphate, 100 pounds to a ton of manure. This to lie all winter as a mulch to be dug in in the spring.

Clean up the garden and remove all refuse to the compost pile to rot down and go back on the garden. Put tomato stakes and bean poles under cover for the winter. Put Irish potatoes in a dark cellar where there is no heating apparatus; or you can bury them outside and cover the heap thickly with straw and then with a layer of earth. Give the lettuce frames plenty of air in sunny days and water when needed, or open up to a rain. Some nitrate of soda between the plants will hurry the growth decidedly.

Cover the whole garden with manure to be turned under in the spring, in the meantime acting as a mulch between the rows of spinach, parsnips and salsify, so that the soil will not freeze so hard that the roots cannot be lifted. Here I leave the carrots out where they grew, but in the latitude of Philadelphia take them up and stack upright in narrow trenches such as are used in the North for celery, covering with boards and straw.

Here and in lower Delaware November is the best time to set strawberry plants; they will get well established and will make a partial crop in the spring. When hard freezing threatens, take up the cabbages; they can be buried upside down or packed closely in furrows upright, side by side, till a bed six feet wide is made and only the top of the heads exposed; then throw green pine boughs over the bed. Turnips for winter use should be piled and thickly covered with earth. Onions keep better when placed where they will be barely above the freezing point and in total darkness; here in southeast Maryland we keep them in any dark and close outbuilding, as slight freezing does less harm than too high a temperature.

On the Delaware-Maryland Peninsula we can now set the plants of the Early Wakefield cabbage in open furrows running east and west and set deep enough to cover the entire stem, 16 inches apart in the rows; they will winter well, and we can set a lettuce plant in all the spaces between the cabbage plants; when the soil is levelled in the spring they will quickly head and be soon out of the way of the cabbages. Of course, this involves heavy manuring and the use of nitrate of soda to push them along rapidly.

Setting fruit trees is better and more safely done here in the late fall. Where the soil freezes deeply it may be better to plant these in the spring. But where deep freezing is not the rule the trees will be making root hairs during the winter and will be ready to supply water from the soil to the swelling buds.

In the flower garden, as soon as the tops of the cannas and dahlias are cut down by frost, cut the tops and lift them. Pack cannas with all the soil that adheres to the roots in a heap in the cellar; and the dahlias likewise, covering with earth to prevent their drying. Here we bury the dahlias outside in a shallow pit and cover thickly with old newspapers and then mound the soil thickly over them.

Lettuce plants in frames should be given plenty of air in sunny weather and watered well as needed, or exposed to rain. With the double glazed sashes no cover will be needed, but with single sashes there will be need for mats on cold nights, to have them head for Christmas. Lettuce seed can be sown in a frame under glass to make plants to winter over for early spring setting. For this purpose I prefer Hanson and the Wonderful or New York, as the Big Boston bolts to seed with the first warmth in spring.

The hardy fruit trees can be pruned in the fall, but it is best to defer pruning peach trees till spring, so that the wood buds and the fruit buds can be distinguished. Prune grapes in spring just before the swelling of the buds.

Celery grown in the Baltimore beds should be completely covered by the middle of the month, and covered also with straw or pine needles. Where grown in single rows take the plants up and pack closely in narrow trenches as deep as the plants are tall; cover with boards nailed roof shape and then cover with straw.

Farmer Mars

Devastated France is now a fertile agricultural country, rich with red clover and alfalfa. German shells did the plowing and German poison-gas fertilized the soil. The great need of France today is labor-saving devices which can be wielded by the old men and boys who are the only farmers left. This report, brought back from France by Hugh Fullerton, of the Long Island Agricultural Experiment Station, on behalf of the American Committee for Devastated France, is printed in the New York Tribune. Mr. Fullerton discussed the needs of France at a meeting at the headquarters of the committee. He said:

"The French agriculturists believed that the devastated areas would never again be productive. I went over two months ago convinced that this was not true, because I had had experience in tearing up Long Island soil with dynamite and had found the subsoil fertile. It is an old axiom of agriculture that the subsoil can not be productive, and the French Government, acting on this promise, had condemned large portions of what used to be the most productive areas of France. In company with Miss Morgan and representatives of the French Government, I visited one of the worst bits of the Aisne war zone. It was 'Red Monkey Plateau,' which was taken and retaken eighteen times. Not a trace of cellar wall remains to tell of its villages, and the soil was overturned to the depth of two to five feet. At the foot of the hill the French experts were still maintaining that nothing could grow there. When we reached the top, we found ourselves wading knee-deep through the richest red clover I have ever seen. The leaves were as big as silver dollars. Alfalfa covered the deepest holes. I will say this for the French: They were prompt to admit their error. Within two days the order condemning this territory was revoked. Four thousand people returned to their old homes in one day. It appears that the plowing done by the shells brought to the surface the deep soil which contains valuable materials of which the top soil, used for generations, had been depleted. Riding through France, one can trace the lines of the trenches, now filled in and planted, by the richer, darker green of the wheat growing in the deep-plowed soil."—The Literary Digest.

Avoid "Scrub" Fertilizer

Now they're putting the low-grade fertilizers in the same class with the scrub sire, the robber cow and the loafing hen and are saying there's no place on any farm for what fertilizer men call "1-8-1" goods.

There is some difference of opinion as to how extensively mixed fertilizers should be used; but when it comes to the low-grade mixtures there is no ground for argument, for these mixtures are unquestionably the most costly source of plant food.

The better manufacturers are discouraging their use, but there still is a persistent demand on the part of some farmers for "cheap" fertilizers.

All that can be said in favor of the robber cow or the scrub sire is that it's cheap, say the soils men, who add that this is precisely all that can be said in favor of the "1-8-1" fertilizer which they brand as "scrub."

There is no universal soil-fertility panacea, because soils are too varied and agriculture is too diversified for any single fertilizer to be adapted to all farms, but as to the unprofitableness of low-grade fertilizers there is no question now not only among soils experts, but successful farmers as well.

College Offers Farm Study in the Home

Many farm people through the state are already preparing to profitably fill in the long winter evenings at home by applying themselves to the study of the latest findings in scientific agriculture through the assistance of the Pennsylvania State College. A list of thirty-eight new and revised agricultural courses have been prepared for this year's work in correspondence study and they are offered without charge to the general public. This is one of the many functions that the college offers as a public institution, supported entirely by taxes, to the people of the state.

This opportunity to gain additional knowledge of farming right in the home was first offered to Pennsylvania farmers twenty-one years ago. Since that time a total of 26,000 farmers, men and women, boys and girls, have been enrolled. Last year more than 3000 studied various courses, and indications now are that more than 4000 will be enrolled this year.

A new feature of the work this year will be the introduction of project work by correspondence. Farm people have a much better opportunity for proceeding with this recently evolved method of practical teaching through conducting experiments in their own fields, than does the student away at school. The scheme has been worked with success in the vocational agricultural schools. Some individual farm problems can be worked out in this way at home through the help of the college. The project can be made practical and directly connected up with the students' every day work.

The courses offered this year by the college include general agriculture, animal industry, horticulture, dairying and a miscellaneous list combining farm management, chemistry, forestry, canning and preserving and cookery. For further information address Director, T. I. Mairs, State College, Pa.

Fruit Bruises Cause Decay

Careful handling of vegetables and fruits in preparation for winter storage is important, according to the Department of Horticulture at the Ohio Experiment Station. Even slight bruises on fruit will give entrance to organisms causing decay.

Temporary storage out of doors in a cool shed is desirable while the cellar is being prepared to receive the fruit. Ventilating the basement on cool nights lowers the temperature.

Protection against the effects of freezing weather may be made by covering the farm storage walls with leaves, straw or corn fodder.

A temperature of 38 to 40 degrees is regarded best for vegetables in storage. Some vegetables will endure light frosts, but should not be handled when frozen.

Starting with a Nickel

Van Palmtree is a 13-year-old boy who lives in Panola county, Miss. Van belongs to one of the many boys' agricultural clubs in that state. Many of the Mississippi club boys have had unusual success with their club projects, but Van's success is noteworthy because of its small beginning.

In April, 1916, five cents was given him by his teacher as a reward for unusually good lessons and good behavior one day at school. With this money he bought a chicken. It was crippled, hence its low price, but much coddling on his part saved its life, and it grew to maturity. The next summer she raised a brood of chickens which were sold for $1.50. With this money Van bought a pig. It was a runt pig, but care and good feeding for a few months made it well worth the $9.36 for which its owner sold it.

Immediately the young financier bought a heifer calf with the price paid him for the hog. Last year and again this she presented her owner with a heifer calf, so he now has a herd of three, all the outgrowth of that one nickel which he invested four years ago. The club boy's cattle are scrubs, but he is hoping to have something better some of these days, and with a boy of his kind, to plan is to do. So it would not be surprising if the nickel continued to grow and become a pure-bred herd before Van is 16.

Prevent disease from re-appearing in future potato patches by hauling off and burning all vines and rotted tubers from those fields attacked this year. Even though the soil may be planted to other crops, potato disease organisms will live to attack tubers two and three years hence.

Preventing or Encouraging Fires?

MARGARET PALMER

The loss from farm fires is far more than it should be. When one stops to think that over 90 per cent. of the fires are caused through carelessness, it seems that too much attention cannot be given to preventing the enormous loss from farm fires. This means that the farmer must remove and control the causes and give special attention to the elimination of all fire hazards and the adoption of protective methods. When one considers that the savings of a whole lifetime can be wiped out in the twinkling of an eye, it seems imperative that all precautions should be taken. Then there is not only the loss of property, but the undue loss of life, the many sad and painful accidents. Not long ago three men were seriously burned while filling the tank of an automobile. The car was in a shed and one of the men held the lantern for the other two to see, the cap was removed from the tank and in almost an instant the fumes from the tank caught fire from the lantern and there was an explosion. The flames spread rapidly, setting fire to the clothing of all three men, the car, the shed, and in no time it was spreading to other buildings. The car was completely burned, as well as the shed, and considerable damage was done to the other buildings, to say nothing of the serious burns the men received, which caused them to spend several weeks in a hospital. This accident could very easily have been avoided had they used a flash light instead of a lantern in filling the tank, or filled it before it was too dark to see. It is fires and accidents of this nature that can be prevented.

The most common source of fires in the country, and ones that can be prevented, are defective chimneys and flues, unprotected stoves and unsafe stove pipes and elbows. Through these many a "vagrant" spark can pass and "wiggle" its way between the clapboards or into a dry attic or other place where it can find a lodgment and soon there is a fire. Fire starters of this nature should be discarded or put in repair. Permitting chimneys and stoves and stove pipes to get clogged up with soot and running them at top speed, is certainly taking chances, for the instant the soot catches fire and a "burning out" takes place, the house and its occupants are in constant danger. Not long ago I saw the home of a widow almost completely destroyed because she left her cook stove become clogged with soot. She was in a hurry and "rushed" the fire along. The stove became overheated and while she was in another part of the house it set fire to the kitchen.

Chimneys are easily cleaned, as well as stoves and stove pipes. Wrap a sufficient number of rags around a brick, tie a stout rope around it and let it down into the chimney. Work this up and down to rasp and knock off the soot on the sides. Then remove the soot from the flue with a scraper. Chimneys should be cleaned at least twice a year. Use a whisk broom and a scraper to clean stoves and stove pipes.

"The chimney's afire!" shrieked one of the men at a farmhouse. So it was, but instead of everyone keeping cool and acting promptly, they all rushed wildly about. The first thing to do is to throw salt on the fire, as the salt makes a gas that puts out fires of this kind. If this does not do the work, send the best climber to the roof and pour buckets of sand or coal down the chimney. In the meantime have buckets of water and brooms handy. Did you know that you can throw a stream of water with a broom? A wet broom is one of the best fire extinguishers; you can throw a solid stream of water or only a spray, or you can use it to beat out a fire or pull down a burning curtain or drapery.

Carelessness in handling and using explosive or combustible materials is another source of fires that can be prevented. Under this head accidents and fires from oil lamps and lanterns, incubators and brooders, and kerosene and gasoline stoves, flatirons, the broken door of a stove or one left partly open, the carelessness of handling matches, etc., all come.

Every woman or girl who uses gasoline for cleaning purposes is handling an exceedingly powerful explosive. It hardly seems worth while to take chances with it when it is so easy to go out of doors to do this kind of work. It is also very tempting to lie in bed and read, but it has been the cause of many a fire. Sleep so often overtakes one, or one may reach over or climb out of the bed, and one never knows how it was done, but the lamp is upset and suddenly we realize there is a fire. It never pays to take chances of this kind. Too much cannot be said for the use of safety matches in the home and about the farm. No others should ever be allowed on the place. There is also the great danger of the loss of life, accidents and loss of property when children secure matches and use them in their play. Matches should, of course, be kept out of their reach, but there is less danger with the safety matches, as they can be ignited only by being scratched on the side of the box in which they come. As an example, a mother who used the "parlor" matches because they were cheaper, sent her small daughter to the basement to regulate the damper. It was not long until she heard screams. The little girl found some matches and set fire to a pile of kindling. The mother was alone in the house with several other small children and it was only with rare presence of mind that she succeeded in putting out the fire and saving the home and its contents. Another mother who used only the safety matches, came home one day and her small son said: "Mother, we tried to make a fire in the middle of the floor and the matches just would not light. Then we went outside where daddy keeps his car and tried it out there but they would not light for us." The mother was weak from just the thought of what might have happened. If she had not insisted that only safety matches be used about the premises things might have ended disastrously that day.

We all know that gasoline flatirons are safe if we use them right, but not long ago a most serious accident happened through the carelessness in using a gasoline flatiron. To hurry the heating of the flatiron it was placed on the top of a hot stove. The result was an awful explosion. The woman was burned so badly that she died in a few hours.

It seems almost unnecessary to sound a warning against the use of kerosene in starting fires or to hurry one along. If there is a defective draft, or a quick fire is desired, pour a little melted grease on the kindling and paper with which the fire is to be started. This will answer the purpose and is not dangerous as is the kerosene. Filling lighted lamps and lanterns is another common source.

Do not set a burning lamp where there is any danger of a curtain coming in contact with the flame. Never place a lighted lamp on a table which

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	" 3-B	" " " " 200 " "	213
	" 4-B	" " " " 250 " "	251
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	" 3-A	" " " " 265 " "	251
	" 4-A	" " " " 330 " "	299
	" 5-A	" " " " 400 " "	349

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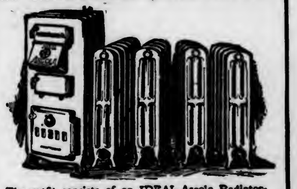

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has a cover on it that little children can reach up and pull off. Lanterns should be hung on hooks in barns, sheds, etc., instead of on a nail. They often slip off a nail, while it is impossible to do that when hung on a hook. Never set a lantern down, for there is always the danger of it getting knocked over or upset in some way.

Smoking should be prohibited in or near the barns, sheds, or any buildings containing combustible materials. Lighted cigar and cigarette stubs and the "heel" of the pipe should all be put out before tossing them away, as it is hard to tell where they may light or the sparks blow to.

The loss from fires caused by lightning can be greatly reduced by having the buildings properly equipped with good lightning rods.

Gasoline is used a great deal on many farms now, and it should be handled with care and common sense. When filling the automobile tank, be sure there are no open lights or a fire. Gasoline should be stored where there is no danger of it coming in contact with heat, light or flames.

Chemical fire extinguishers are invaluable and should be placed in every farm building, with two or more charges within easy reach in case more than one should be needed to get the fire under control. Then every member of the household should be instructed as to how they are operated and how to charge them.

Many fires and accidents are caused by attempting to carry too many things while carrying a lamp or by setting down a lamp in dark places where, in moving or turning about, the lamp is upset.

It is important that no accumulation of trash, weeds, old grass and rubbish around the premises be allowed, since such accumulations are nothing but "fire breeders" and "traps" awaiting the chance spark or the careless smoker who drops or tosses his burning match or cigar or cigarette or pipe "heel" without a thought as to where it may land. On the other hand, if there is an oily substance in the rubbish piles there is the added danger of spontaneous combustion. Rags or papers saturated with linseed oil are particularly dangerous in this respect and should never be thrown in rubbish or brush heaps or any "old place," as one can never tell when they may burst into flames and occasion a disastrous fire. In burning materials of this kind, or when it is necessary to burn over fields of stubble, windy days should be avoided. In burning over stubble land, one should plow furrows around the edges first and have plenty of barrels or buckets of water and grain sacks at hand, ready to put out any fire that wants to spread. Never leave any to burn out of itself, as one can never tell when a gust of wind may come along and carry the sparks to where great damage can be done. I saw this thing happen once and it was very expensive business, as the whole summer's wheat, oats and hay crop was wiped out.

If you smell smoke and are at all suspicious that there is fire some place and cannot locate it, darken the rooms and take a bull's eye lantern or a flash light or a lamp with a good reflector and go through each room. If there is a fire, the beam of light will catch the smoke instantly and you can follow it to the very spot where the fire is. After the fire has been located it is often necessary for one to work quickly. Often the ax or pick will have to be used in order to get at the base of the fire. If the fire is at the back of the plaster it will turn brown; if back of woodwork, it will warp the varnish or paint and show blisters.

Grain sacks and brooms make ideal weapons for fighting fires. The broom is always convenient and it will make a pail of water go farther than when it is tossed on the fire, as the broom will throw sheet after sheet of water and then one can use it for beating out many fires. In putting out a fire, begin at the base and do not waste the extinguishing material on the flames and smoke. If the fire is eating its way upward, give it one dash at the bottom and then turn the stream to the top and work downward. While water will put out a fire of wood or paper, never use it if the fire is in hot fat, burning oil, gasoline, kerosene or grease, for it will only make matters worse, as the water will spread the flames around and make the fire bigger and harder to fight. Sand and flour are the best extinguishers for fires of this nature. First throw on the sand and then a blanket. This shuts out the air and will smother the fire instantly. In fires of this kind always work at the base and towards the center. In this way one does not run any chances of the clothing catching fire. If one's hair or clothing does catch fire, avoid all drafts and do not rush out in the open, but roll up in a rug or a blanket.

Well Arranged Kitchen Saves Mother's Steps

Mother walks miles right in her kitchen! In tests made in the kitchen of practice cottage at the University of Wisconsin it was found that in doing the daily work of preparing three meals a day the housewife walked 2 miles. But in the large kitchens which most farm houses have it is not unlikely that the farm woman may walk 4 miles a day in her work.

To cut down the number of steps in the daily work in the kitchen Miss Jean Krueger of the home economics department offers these suggestions:

"Steps are saved by grouping the equipment used in preparing meals as well as the equipment used in clearing away after meals. If the ice box, food cupboard, or pantry is to the left of the working table the stove to the right of the working table and the serving table to the right of the stove, then the housewife does not cross her own path unnecessarily. The clearing away equipment might be arranged as follows: Table to right of sink, drain to left of sink, china shelves to left of drain.

"The best floor covering is a good quality of linoleum. It saves time, strength, and reduces the jar in walking. The cracks should be cemented and the corners carefully fixed in order to be sanitary.

"A good size for the farm kitchen is 12x14 feet. A small kitchen with an alcove dining space for either family or field workers will save many steps. An 8x16 foot size is good for this plan. In kitchens of these dimensions, of course, every bit of space should be used for storage and working surfaces. A pantry is often unnecessary if kitchen wall space is carefully used.

"Avoid a long passageway from kitchen to dining room. If possible, do not have more than two doors; one to the dining room and the other to the back hall and porch. The best location for the kitchen is south and east or south and west."

Red Cross Budget Shows Decrease

The American Red Cross has outlined a "budget" for its program of relief and service for the fiscal year ending July 1, 1921, which calls for the expenditure of $48,200,000. This is $21,000,000 less than the amount spent in 1919-20, which was $69,400,000.

In this budget $31,500,000 is for relief in foreign lands, included in which amount is $11,000,000 in purchased supplies on hand and not distributed. Appropriations for domestic activities total $16,700,000. The largest item of this "home" budget is $7,800,000 for civilian relief work, $5,900,000 of which is to be held in reserve for carrying out of actual relief. For assistance to soldiers, sailors and marines in hospitals and in camps this year $1,900,000 has been set aside. For improvement of health and prevention of disease throughout the United States during the current twelve months $4,200,000 has been appropriated, and $1,000,000 has been set aside for developing the peace time program of the Red Cross by service to its chapters in all regions. The remaining $1,800,000 will go for administration expenses as against $2,300,000 so spent last year.

The Fourth Roll Call is not a campaign. It is merely the yearly opportunity for American men and women to pay their annual dues and renew their membership in their Red Cross, that the obligation of the Red Cross to America and to suffering humanity may be discharged.

Do your part to enable the American Red Cross to fulfill its obligations, undertaken at the will of the American people. Renew your membership promptly during the Red Cross Roll Call, November 11-25.

Look Out for Bruises

Beef enough to feed 62,985 persons a year, giving each his average supply of 59 pounds, is a lot of meat—certainly too much to waste. This is precisely the amount, however, which the Institute of American Meat Packers figures is lost in this country in a year on account of portions of slaughtered cattle which have to be removed because of bruises and other minor injuries.

They have compiled a table showing that in the case of hogs killed in Chicago during 1919 the amount of meat lost for the same reasons is equivalent to 80,295 hogs, for raising which 1,605,900 bushels of corn is required and, of course, lost.

There are many causes of bruises, some of which cannot be eliminated. Animals fall down on sleet and ice, and sometimes even in warm weather. Some animals are kicked and others are injured in loading and unloading and in overcrowded cars. Bruises also are caused by heavy clubs, prod-poles bearing spikes, by kicks from the driver's foot and sometimes even by the prongs of pitchforks. Abuse and mistreatment may occur on the farm, at assembling points, on runways, in pens or elsewhere.

A bruise, undetected until the animal purchased has been dressed, may appear to be the misfortune of an individual packer. But wasted meat or misused meat lowers the value of the dressed carcass, and thereby indirectly lowers the value of live stock. The prices which can be paid for live stock are limited in the long run by the amount of money which can be obtained for meat. The total receipts from a bruised, crippled or mutilated animal are less than the receipts from a prime specimen. If the steer raised by one producer is mishandled, the loss falls not only on him, but also on all other producers. In the long run a loss which represents waste is the misfortune of every man in any phase of the live stock or meat business—and of the public.

In place of whips or clubs in handling live stock, a flapper, easily made by folding a piece of canvas, sewing it together and tacking it on to a swivel handle, may be recommended. It is more humane and leaves no mark or bruised place.

Buy Your Timothy Seed Early

According to estimates issued by the Bureau of Markets of the United States Department of Agriculture, the timothy seed crop this year is only about 80 per cent. of last year's production. The hold-over from last year is thought to be below normal. It is, of course, too late to get any relief from the shortage by saving more timothy for seed. It will be well, therefore, for those who will need timothy next spring to look up good stocks and make their purchases at an early date.

Rust is Costly

Farm implements either wear out, rust out or break. A break, as a rule, does not permanently disable the machine—a new part repairs the damage.

A machine does not wear out for a long time unless rust is permitted to get in its deadly work. And rust is so easily prevented. A little good metal paint having rust inhibitive properties will prevent rust. A small supply of it kept on every farm and used to touch up bare spots as fast as they appear would double the life of most farm machinery. It doesn't matter if the job isn't neatly done. Farm machinery isn't supposed to look pretty. It's the utility, the saving that should be considered.

The Hot School Lunch

CAREY D. MILLER.

Pa warms the milk for the little calf,
Ma heats the food for the chicks;
They eat a hot dinner at noontime, too,
But my lunch is cold as bricks.

We have a hot lunch at our school now;
There's cocoa or soup that's hot as the dickens;
We fill up our cups as we pass along,
They've decided now we're as good as the chickens.

University of Idaho.

Buying Cattle for Fattening

The actual buying of cattle to be fattened during the fall and winter months is a simple matter. But it requires careful judgment on the part of the buyer to know when to buy and what to buy, say specialists of the United States Department of Agriculture. An animal bought right can usually be disposed of at a profit.

Naturally the best time to buy feeders on the open market is when there is a heavy run and a limited demand. Buy when there is little competition, especially competition between packers and feeders. Early fall buying, one year with another, is usually preferable; especially is this true in soft-corn years. Cattle should be purchased in time to consume the corn stalk fields and other coarse roughages before severe winter sets in.

In determining what class of cattle to buy, such factors as age, quality, uniformity, and condition of feeders, length of feeding period, kinds and amount of feeds, and market conditions should be considered.

Older cattle make greater daily gains, fatten more quickly and utilize coarser and rougher feeds more advantageously. Young cattle, all feeds considered, make more economical gains, but require a longer feeding period. Older cattle usually show more uniformity.

As a usual thing, a good quality animal of any of the recognized beef breeds should be sought for. Feeders showing dairy blood will not do as well as those of strictly beef blood, in putting on flesh in the region of the valuable cuts, and are always discriminated against in the market. However, certain conditions will warrant the feeding of common grades. A strong demand for good feeders and a sluggish market on common stuff might mean more profit in feeding the cheaper cattle. Buy the kind that looks like the most for the money.

Dehorned cattle feed out to better advantage, ship to better advantage, and market to better advantage. Get the quality and age to suit, and if you have to take horns in addition, dehorn the cattle when they go into the feed lot. The purchase should be uniform in size, color and quality. As a usual thing, thin feeders are the best buy. However, for a very short feed, cattle "warmed up" a little should be the better. Market conditions for certain seasons of the year should help determine the kind of cattle to buy. A certain weight and quality of beef is in demand at certain times of the year. Be familiar with the general trend of the market according to seasons, and feed the kind that will be in demand at the time you want to market.

Bull Associations Increase

In the count-up of bull associations for the last fiscal year made by the Dairy Division of the United States Department of Agriculture, associations are found all over the country. There are now 123, where there were only 78 the year before. This is an increase of 57 per cent. Thirty of the 48 states in the Union are on the list.

Associations are not equally numerous in all states, however, for four—Alabama, Pennsylvania, Mississippi and South Carolina—furnish nearly half of the total. The number of associations found in each of these four states is as follows: Alabama, 7; Pennsylvania, 21; Mississippi, 11; and South Carolina, 17. Three of these leading states are in the cotton belt. Dairying is comparatively new in that part of the country, and the men going into the business are building on the right foundations from the start. One of the important foundations of effective and lucrative dairying is co-operation, and the extension work carried on by the Dairy Division and by the various state agricultural colleges has been the means of introducing efficient methods at the outset wherever dairying is taken up in the South.

Pensylvania is an old-established dairy state, but has taken to the bull-association idea in a remarkable manner, and has, in fact, the largest number of all.

Can Pork for Home Use

There's a profit in selling pigs and buying pork—but not for the farmer who follows this practice. The farmer's most profitable course is to kill, cure and can enough pork for his own use and sell any additional amounts which he can produce and for which there is a demand. The practice of home curing pork has suffered through neglect, but it is now being revived, according to the Bureau of Animal Industry and the States Relations Service. These two bureaus of the United States Department of Agriculture are co-operating to encourage the general adoption of this wholesome usage among farmers. Home-cured pork, scrapple, pork pudding, sausage, canned pork, headcheese and lard are among the foods which the farmer should get from his own cellar shelves and not from the city market. All transportation costs and commissions remain in his pockets.

A bulletin, "Killing Hogs and Curing Pork," has recently been revised by the Department of Agriculture. New methods and improvements have been given space in this discussion, and details of the processes for canning fresh pork have been added. Canning preserves pork with fresh pork flavors and lessens the toil and time incident to some of the older ways of curing the product. Besides being rapid and simple, the new process saves pounds of pork for all periods of the year which formerly had to be eaten soon after slaughter or be wasted.

How About an Ice House?

Ice harvested from ponds on the farm saves many dollars a year to milk producers and provides the wherewithal for many home comforts. The United States Department of Agriculture, in Farmers' Bulletin 1078, which may be had upon request, tells how to build an ice house in the slack fall season and how to store ice economically and securely. One and a half tons of ice properly stored will serve to cool the milk from one cow for a year and leave some for family purposes.

An efficient housekeeper will use her head to save her heels, using judgment to prevent useless running back and forth.

The Soil Improvement Committee of the National Fertilizer Association has added to its staff as editorial manager Mr. W. W. Weir, recently assistant professor in the soils department of the University of Wisconsin. Mr. Weir is a graduate of this university, from which he also obtained his master's degree specializing in farm crops and soils.

In addition to a wide experience in editorial work and as an author, Mr. Weir has engaged in farming in a practical way and has also engaged in commercial work.

We feel that the new connection is a cause for utmost congratulations and we extend our best wishes.

In eradicating the cocklebur, remember that it carries a double-barreled gun. Every bur carries two seeds, only one of which sprouts the first year. Even when the product of that seed has been killed the other will be in shape to make trouble the next season. The United States Department of Agriculture has a circular on the cocklebur—how to get rid of it.

Let those complain of the high cost of everything who eat fruit transported for long distances or demand out-of-season varieties. The rest of us may well be content with Eastern States apples, crisp, juicy, appetizing and healthful, and moderate in cost.

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Pure-Bred Hen on the Farm

(Concluded from page 309)

from the show flocks will cost more, but this is not what the farmer should buy. With, say, two hundred eggs as a start one should have at least a 75 per cent. hatch, and with reasonable care should be able to mature at least 50 good pullets, leaving every bit as many males, if not more.

One should not be discouraged, however, if the percentage of hatch and number reared is somewhat lower than the percentage obtained with the mongrel flock, as this very often occurs. The reason for this is not because pure-bred fowls lack vitality, but chiefly because many specialty poultrymen make the mistake of housing their fowls too closely in order to force greater egg production. Once a flock, even of small size, is established on the farm, of chicks reared under the free range conditions of the farm, it will be found that the pure-bred fowl has every bit as much vitality and is capable of producing eggs of as great fertility as the mongrel. In other words, it is the environment under which the fowl is reared and not the breed that makes for vitality in flocks and fertile eggs.

The writer, in handling large flocks of pure-bred fowls, has always found this to be the case. Very poor hatching results have been obtained from closely housed flocks; in fact, only free range stock, not only reared on range, but allowed range at maturity, can give the maximum results in hatching eggs. It might be well to say here that if possible the first hatching eggs should be secured from such flocks,

The question, of course, arises as to whether we have anything better after the flock of good breeding is established. In this I can speak from my own experience, having conducted for some years a large commercial poultry farm on which nothing but certain breeds were raised, and also during this time operated a market route through the surrounding district for the purchase of poultry products. On the market there really is the greatest difference between good stock and mongrels, and that difference is best shown by the returns in the form of from five to, in many cases, ten cents a pound in favor of the fowls of good blood lines.

The reason fowls of pure breeding are more desirable on the market is because of their uniform size and color of feather if sold alive, and on account of their uniformity in color of skin and flesh if sold dressed. Then, too, pure-bred fowls are usually in better condition in point of plumpness. All this comes about because the fowls have been bred for these points. Plumpness is, of course, a great deal a matter of feeding, and fowls of a given breed are just as likely to need fattening as the mongrel. I have, however, found a very large percentage of mongrels that would never fatten under any condition. They never had the breeding back of them to bring about anything but a poor condition. This is, of course, speaking of averages. The plain truth is that fowls of good breeding, like hogs of good blood lines, can, and will, make a 100 per cent. use of the feed consumed, while on the average, the mongrel will not.

In egg production the same thing holds good. The average mongrel cannot produce the number of eggs that the hen of breeding can on the same feed, because she has not been bred for egg production. When it comes to marketing the eggs we have the same balance in favor of the pure-bred fowl as we have in marketing the fowl. We have uniformity of color and size and this uniformity will always bring the grower five cents, or over, per dozen above the average product. Very frequently the excess received for the better product will pay the cost of installing the new stock, the first year.

The matter of which is the best breed is one that has been given more consideration than it deserves. In reality it is of little consequence, for there are good and poor strains of all the breeds. The purchaser should take up the breed he or she likes best, and stick to it. As a general rule, one of the general-purpose breeds will be found best on the farm, for one then has both meat and eggs. However, where there is demand for white eggs it may be well to adopt one of the egg breeds. There is really no best breed, and the farmer who realizes this has learned something that will save him the trouble of constantly changing from one breed to another, as so many do, in an effort to find the best breed. Don't have more than one breed, and don't mix them with mongrels. Any breed can be made the best breed if the owner will give the fowls proper attention, for care and feeding have made more records than any other combination. *Pennsylvania.*

Better Sires Campaign Completes First Year

A wider recognition of good pure-bred sires and definite knowledge showing how they improve domestic stock are the outstanding results of the "Better Sires—Better Stock" movement, which completed its first year October 1. The purpose of the work is to improve the average quality and general usefulness of live stock in the United States.

During the year, 2756 persons enrolled and each received an official emblem denoting participation in the movement. These persons listed with the department a total of 131,482 animals, and in addition 170,030 head of poultry. According to a summary of results just made public, there is a very small proportion of inferior female stock in herds and flocks headed bp pure-bred sires. Very few of the females are scrubs, only 2.7 per cent. With poultry the figures are still lower, 2.2 per cent. While live stock experts have generally recognized the beneficial influence of good sires on the quality of farm animals, the very low percentage of scrubs is a surprise even to officials in charge of the better-sires campaign. Taken as a whole, the majority of female animals bred to pure-bred sires are grades. But approximately two-thirds of the sows are pure-bred; also two-thirds of all the poultry listed are of pure breeding.

Of the 46 states co-operating with the United States Department of Agriculture in advancing the merits and use of pure-bred sires, Virginia, Nebraska, South Carolina, Massachusetts and Washington have been especially prominent. In Virginia 881 live stock owners have signed agreements to use pure-bred sires in all classes of animals kept and to follow methods leading to further live stock improvement. Progress has been measured and reported every three months since the campaign started. During the last quarterly period the greatest activity has been manifest in Nebraska.

Everyone who keeps any kind of domestic live stock is eligible to participation in this nation-wide plan of improvement. The vast majority of those active in the work are farmers and stockmen; members of boys' and girls' live stock clubs are likewise taking part. The improvement of all live stock in the United States is a fundamental step toward more economical production and enabling this country more effectively to meet foreign competition.

In the administration of the improved live stock program, the United States Department of Agriculture is furnishing data, posters, illustrations, and other suitable material to persons interested in raising the quality of stock in their localities. During the coming year the work is to be amplified with a view to furnishing live stock growers new and useful information on breeding. One branch of this work on the cause and prevention of runty live stock is already in progress.

Farm Labor Problem Easily (?) Solved

According to an editorial which recently appeared in a large daily paper of Chicago, the farm labor problem is easy of solution. All that is necessary, in the editor's opinion, is to reduce the area of our farms to a size which one man can handle alone or with the help of his family. In other words, the farmer should hire no labor, then there is no farm labor problem.

If the editor applied this theory to other lines of business he would recommend that the labor question in the coal industry, for example, be solved by having the owners of coal lands reduce their holdings to a size from which they could mine the coal by their own labor, and their additional coal land would be split up into small holding, each of which would be mined by an individual miner.

It would be interesting to hear the comments of the press and public should the editor dare suggest such a proposition. Yet he has the audacity to suggest that farmers are not capable of directing labor and that a farmer should not aspire to a larger business than he can run with his own hands. It is our understanding that this is a free country where individuals possessing exceptional merit or ability and who are capable of directing the labor of other men to the mutual advantage of employer and employes, that is, so that each accomplishes more than when working alone, shall have an opportunity to do so. Why an exception should be made in the case of men who raise the nation's food supply is difficult for the average intellect to comprehend.

We believe the solution of the farm labor problem lies in having the price of farm products high enough, in comparison with other necessities and luxuries, to permit the farmer to pay wages which are high enough to enable him to hold his help in competition with employers in other industries.—*Tractor Farming.*

Treat Poultry House and Fowls for Lice

Most farmers clean and disinfect the poultry house some time during the summer and fall months. It is a good thing at this time to treat the birds for body lice. This may be done by applying a small portion of blue ointment just below the vent or by dipping the birds in a solution of sodium fluride powder in 5 gallons of water. If the latter treatment is used, it should be done on a warm day to prevent the birds from catching cold.

The blue ointment treatment is the cheapest and easiest method of treatment and can be applied at any time of the year and under any weather condition without danger to the fowls.

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Detecting and Culling the Boarder Hen

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1304, DEC. 1.—Medicinal Herbs. What do you grow and what do you search the woods and fields for? How do you gather and preserve them? Do you sell them or just use them in your home, and, if the latter, how? This topic is proposed by a reader and we think it may be made a very helpful one if each correspondent gives complete, but concise, information.

TOPIC NO. 1305, DEC. 15.—Co-operative marketing: What has been accomplished in your section recently in co-operative marketing, in either a large or small way? This is a much discussed subject and we want to hear of the successes and failures in big and little experiments along this line, that we may profit by, and make progress from the experiences of one another.

G. F. S., Georgetown, Del. — Seemingly, we have been very successful in eliminating the "boarder" hen, and with comparative ease. Our methods are about as follows: Dwarfed or inferior pullets naturally are sold before winter; hens moulting earlier than September, and those entering their third year almost invariably are disposed of in late summer or early fall; any hen, especially of the larger breeds, in which the space between the rear of the keel and the pelvic bones does not measure at least three fingers in width; those which usually have pale heads, but this is merely incidental, because the former test, as a rule, proves inefficiency. To detect the non-laying hen at any time, find the condition of the pelvic bones at the vent. If the space between these bones is narrow, admitting but one or two fingers, and tight, the hen is not, at that time, laying; and usually the head and comb are pale. If three or more fingers are admitted, and the bones are not very resistant, the subject usually is laying; she also has a red comb, as a rule, and is singing. If some resistance is felt, especially if she gives a little squawk as this resistance is overcome, it is almost certain that she has finished for a time. The size of the abdomen, evidenced by distance between pelvic and keel bones, as noted above, indicates laying qualities; condition of pelvic bones themselves, present laying condition. These we think almost invariably reliable.

To make examinations, place the hen under left arm, head to one's back, left hand grasping her legs as they are flexed against her body, hold gently and with the fingers of right hand make the tests. A little practice and this becomes very easy, requiring but a few seconds for each fowl. We take them from the roost at night.

C. C. C., Jr., Penn Laird, Va.— Doubting both my ability to cull out the boarder hen and profits claimed by many in culling, I tackled the job some years ago in more of an experimental mood than anything else. The simplicity of culling out the boarder hen proved to be the greatest problem I had to contend with. I had been reading a great deal about detecting the boarder hen by pelvic bones, form of abdomen, etc., till I naturally came to the conclusion intelligently selecting the boarder hen was a matter of deep study. Today I know a close study of the pelvic bone, abdomen, etc., is of great help in culling out the boarder hen, but a knowledge of these details in culling is not absolutely essential for a fairly good job of culling. Unless one's fowls are quite tame I would suggest culling them at night on the roost. Of course, a lantern is necessary, since the fowl should be examined carefully. I first look for a full crop when culling at night. The laying hen invariably consumes a great deal of food, and will be found with a full crop at night. As a rule, the laying hen is not difficult to catch at night, and will squawk but little when caught. Beware the hen that proceeds to flutter, scratch and squawk the instant you catch her. In all probability she has never been a paying layer and never will be. Furthermore, her crop will usually be found half filled. A clear eye and a red comb, particularly with warmth to the touch of the latter, is a good indication of a laying hen. Weight cannot always be depended upon as an indication of egg production, for it must be remembered that the good layer is never fat and that the boarder hen is frequently fat or in fair condition, due to her flesh and fat not being drawn upon by egg production. I study my fowls at all times, observe those on nests, early and late risers, early and late going to roost, etc. The laying hen is off the roost early in the morning and late to retire. With these simple rules for detecting the boarder hen I harbor but few. The laying hen is invariably a healthy hen, active, with no deformities and free of lice, mites, scaly leg, etc. Much has been written of late years about the worthlessness of hens reaching two or three years of age. As long as hens are laying well, keep them. The mere fact they are laying is proof positive they are of a laying strain, the very thing we are striving for, so why dispose of what we are laboring to get, so long as we are getting it.

I now have hens five years old that are still laying well. In my opinion, based on many years experience and close observation, it is nothing short of downright simple to sell a good laying hen merely because she has reached three, four or even five years in age.

J. W. R., Carbondale, W. Va.— As poultry has been an important sideline to our farming business for years, it is only natural that we should know something about breeding and culling for greater egg production. Of course, there are several signs by which one can determine the non-producer of eggs, but we have one infallible sign which we can rely upon: When a hen has a pink comb and is plump and well-shaped you can gamble that she is an egg producer; that is, if you have one of the egg-producing breeds. You may smile when I say that I can tell the "boarder" hen at a glance, but nevertheless it is a fact. I have tested it out thoroughly each fall. I go over our flock and pick out the non-producers, kill and dress them for market and I very seldom make a mistake in getting the non-producers.

W. H. H., Prince George, Va.—We find that it doesn't pay to keep a hen over three years old, as after this she becomes a boarder hen, or one that doesn't produce half enough eggs to pay her board or keep. After three years it is best to get rid of them and let younger and more profitable ones take their places. We turn out pullets every year, culling out the three-year-old boarders. With a few exceptions it is a well known fact that after a hen becomes three years old her best laying days are over. We have recently culled out a good many boarder hens at the extremely high price of $1.50 and $1.60 each. I find this to be the most profitable way to make use of them at this season.

Remember that standing timber will keep; it can wait over a period of low prices without rapid deterioration.

Each proved good cow in the herd means a profit; but the more poor cows there are, the greater the loss.

The right to vote is a privilege which makes intelligent consideration of the questions at hand a duty.

A few minutes given at a definite time each day will keep a record of the farm business; and with accurate figures at the end of the season a man can see at a glance where he is making money and where he is losing it.

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For illustrated literature, maps, description of farm opportunities in Manitoba, Saskatchewan and Alberta, reduced railroad rates, etc., write Department of Immigration, Ottawa, Canada, or

F. A. HARRISON
200 NORTH SECOND ST., HARRISBURG, PA.
Canadian Government Agent.

The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address

WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

DECEMBER 1.—It is time to solve the Christmas present problem again. Can you help some of your farm sisters with a suggestion as to how they may make or secure at a moderate cost, really attractive and useful presents for their men folks, children and women friends? Please don't tell us of the "old stand-bys," but of something "different"—give us an idea, not a "chestnut."

DECEMBER 15.—Several years ago at this season we discussed Christmas candies and goodies, but sugar wasn't such a luxury then as it is now. Let's discuss them again, but with a view to economy, with as little loss of "joy" as possible, under present conditions. Give recipes fully but concisely.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Play Rooms and Play Things for Children

Mrs. J. B. B., Coudersport, Pa.—The complaint arises from all parts of the country that present day houses are not built to contain children. Men who build houses for rent refuse to let them to men who are whole-souled enough to want children in their homes. Architects who plan houses divide the downstairs portion into halls, front and back stairs, den and dining room, with no possible space for a room where a mother can care for her child. Where is the seat of this trouble? Not with the majority of wives, whose empty arms cry eternally for babies; not even with the better class of men. One man said that children were usually confined in an atmosphere of "don'ts." To remedy this condition he had a play room arranged in the third story of the house. The windows were provided with iron bars. The floor and walls were built of solid material, where they could exercise in any manner they pleased. The only "don't" used was, "You must not indulge in any pastime which will permanently injure your bodies or endanger lives."

The supervision of a tactful mother is usually a pleasure, and companionship is formed to endure through life. Unless a boy's best friend is his father or mother he generally goes wrong.

If a house is provided with living room and den, why not try the plan of having father sit with his wife in the living room and give the babies a room for themselves. In old-style houses two sleeping rooms were provided down-stairs. One of these could be arranged for a play room. The price of a few costly dinners or auto parties would be sufficient to build a sun parlor where the children could have every advantage for growing healthy bodies and minds. Provide this room with two rows of casement or hinged windows, one above the other, so that proper ventilation may be secured when the air is too cool to blow directly upon their bodies. An awning on the outside would furnish the needed shade in summertime, allowing full sunshine in winter. Pots of smilax and ivy may be used for trimming, and some of the lighted space given to a window garden, providing both work and recreation. Plenty of cupboard space is necessary to insure any degree of comfort for occupants or caretaker. Paint them with white enamel and stencil some pattern which will be pleasant to a growing, manly boy or womanly girl.

The toys that may be made at home begin with the soft, fluffy balls for baby, made by cutting a circle of paste-board 2 inches in diameter; make a hole about the size of a lead pencil in the center. Thread a zephyr needle with colored yarn, draw the ends together, double and sew through the center and around the edge until the hole is filled. Remove paste-board and you have a ball which a baby can hold. Knitted animals filled with milkweed fluff or dried moss are amusing toys.

Paint empty thread spools with tube paints, beginning with the primary colors and mix paints to form secondary colors and shades. Use empty iron rods from patent roofing to string them. Girls like to cut paper dolls and boys like to cut wooden blocks. If the dolls are glued to the blocks a chance is given for them to work together. Historical pageants, a circus, theatrical troups, etc., may be formed. Pieces of wrinkled paste-board used for packing make log houses, with cork-covered pieces for roof and floor, and furniture cut from illustrated magazines.

Sewing cards are easily made at home if the designs are dotted for needle spaces. Basket weaving, rug making, spiint weaving, making bean bags from bright colored denim. Sand and clay modelling tables are instructive. Teach them to collect postage stamps, postcards and material for scrap books, keep diaries recording weather conditions, rainfall, observations of birds and animals after the manner of Gilbert White in "Natural History of Selbourne." And lead them in the ways of righteousness for His name's sake.

Miss M. E. F., Bridgeton, N. J.—If possible have a play room for the children, which they may call their very own, if it must be in the attic, cellar or barn. By all means encourage outdoor playing. The best playhouse in the world is God's great out-of-doors, in the sunshine and fresh air.

The play room should not be burdened. Toys are meant to educate, as well as amuse. They teach the child something, and if too many are crowded in, the child fails to grasp the purpose for which the toy was made. The little daughter of Queen Wilhelmina of the Netherlands, was allowed only one plaything at a time.

The outdoor games are beneficial and the exercise develops their muscles and makes them strong and fit for life. Childhood is preparation time. The future of the child depends upon the training received in childhood. Dolls are perfectly natural for a little girl. Make her a rag doll and she loves it above the rest. Boys prefer the mechanical toys. Small children like blocks. These teach them to discern the different shapes and sizes and to build. Blowing soap bubbles is good fun. "Playing house" is simple. All that is required is an ordinary shoe box and a furniture catalogue. The box is the house, and the cover can be cut to form the partitions between the rooms. By cutting out the different pieces of furniture from the catalogue the house may be prettily furnished. Dried peas, softened by soaking, may be combined with toothpicks and made into houses, pieces of furniture and other playthings.

Story telling appeals to all children. Told stories are more real to a child than when read from a book. Paste pictures in their scrap book, which tell a story. Children love to cut paper. Purchase a small pair of scissors with blunt points, and much time may be passed with paper dolls. The greater part of our education is received through the medium of the eye. From pictures in natural colors the child may learn the names of all the animals and birds. Picture puzzles give hours of entertainment. Colored magazine covers may be mounted on cardboard and cut into irregular pieces for the child to reconstruct.

Mrs. O. J., Rio, La.—My children never had a play room. But I fixed a box with hinged lid and padded cover, and a low shelf in one corner to hold their playthings. As soon as the babies were old enough to walk I taught them to put their toys away when they were through playing with them. Later, they were required to keep them dusted and in order. Little children get more pleasure from simple, durable, home-made playthings than from toys too expensive or fragile to be played with. Fifteen years ago I paid ten cents for a set of toy animal patterns and made presents for some of my little friends, from scraps of outing flannel. Last week one of those children, now a woman, told me she still has her white rabbit and always loved it better than her costly dolls. Making scrap books has furnished more amusement for my little ones than any other one thing. When our first baby was small I began collecting copies of pictures by famous artists, mainly from magazines, illustrating poems, Bible stories, etc.; these filled one book. By the time he was six years old he was as familiar with their names and masters as many grown-ups. Another was filled with short poems and pictures of poets. Another with pictures of flowers, plants and vegetables cut from seed and nursery catalogues. I use plain wrapping paper for the books, stitched down the center and folded on the stitching. The backs may be plain cardboard or celluloid. One-half yard of delicately colored cambric makes a nice book for the littlest tot. A lovely set of plates for dolly can be made from the linings from discarded fruit jar lids by decorating in oil colors with tiny sprays or plain bands.

Mrs. C. F. G., West Valley, N. Y.—Home-made playthings often please children better than expensive bought ones. A few spools of different sizes, stained in bright colors and named after people they know, will afford hours of pleasure. After the children have gone to bed take a couple of dozen peanuts, bore tiny holes in them by means of a large darning needle; into these holes insert toothpicks, short and long pieces, for arms and legs for the people, four of the same length for animals. In the morning present them to the children, calling them the "Goober family," and their cows, pigs and hens. You will laugh with them and when they have finished playing with them for the day let them crack and eat the "Goobers."

Get the picture of an old-fashioned cradle, if you have never seen one, cut out a paper pattern and tack on a piece of thin board. You can get little boxes at the stores for boards. With a pencil mark around your pattern; now remove it and with a small saw cut out the pieces and put them together with small nails; paint or varnish the outside. Have mama make a little bed with pillow, sheets and quilts to fit it, and the "little lady" has a nice place to rock her doll, and it will serve as a source of amusement until it is no longer needed. A little sled can be made in the same way, but as the children grow older I think it is best to buy sleds and wagons like other children have.

A play house is fine for the country. You can fix up one corner of a shop or garage, let them eat their lunch there and play "keep house." They will enjoy it so much you will feel well repaid.

Mrs. J. C., Ethridge, Tenn.—For the busy mother who has no nursery, it is a convenient plan to choose the simplest furnished room in the house, take your work and entertain the children at the same time. Hall or living room is possibly most convenient for all. There are times when the children get on a "tear" and play more roughly than ordinarily. At these times remove any destructible object from the room, sit by the window with your patching, bean shelling or whatever is at hand, and watch them play. As soon as my children are old enough to learn them they delight in "Marching Around the May Pole Tree," "Green Gravel," "Ring Around Rosy" and "The Duke." They also love the more quiet games of "William Tremble Toe," "Club Fist," etc. Story telling is a source of delight to them, and they will stop their play to listen to a story or to learn to repeat verses themselves. They also enjoy hearing their mother sing and when everything else seems to lag a song apparently forgotten may be brought to mind and is something new for the little ones. Story telling and such like is never time lost if the subject is well chosen, as it will make an impression on their minds that is educational, and I have actually attracted the attention of a six-months-old baby by repeating rhymes, and thus kept it from fretting while I kept on with my work. One rhyme that is delightful in its smooth rhythm is one in the meter of "Charming Billy Boy"—"Oh, where have you been, baby boy, baby boy?"'—or any such that may come to mind.

Many attractive playthings may be made at home. For instance, cuddle dolls, etc., from Terry cloth may be fashioned at home and tinted with water color. Comical dolls may be made from cocoanut hulls, by making a large body and using side of hull containing hole, for face. Black eiderdown makes a good back for head. All kinds of animals can be made from colored outing flannels. Various shapes in bean bags, and dainty doll quilts.

Big brother or father can make the doll furniture, swings, etc. The big boys made my little boy a little wheelbarrow out of light-weight pieces of wood, painted it red and he enjoys this as much as some of his more expensive playthings. On exhibition at our county fair (Lawrence) were doll furniture, log cabins, airships, bucking broncho and many other playthings, made entirely by children in the public schools.

Mrs. E. M. A., Ashville, N. Y.—My house isn't large enough so that it has ever been convenient to devote a room to toys exclusively, and my little daughter is so socially inclined that she wouldn't enjoy isolation anyway, but she does enjoy home-made toys. She is seven, but this minute she is spinning a top her grandfather made for her some years ago, and is enjoying it immensely, too. Before she began school she read and studied a great deal at home, so my brother made her a very convenient little desk with which she has taken lots of comfort. As soon as she was old enough to swing safely alone I got her a good swing rope and my brother put up a safe and substantial little swing in an apple tree beside the house, and in real hot weather she almost lives out there. Farther back than that, while she lived mostly in her buggy, I bought a pretty celluloid doll's head for ten cents. This had the great advantage of being very light, so that after I had added a soft body of muslin stuffed with cotton, the baby had an absolutely safe doll that wouldn't give her a bump if she swung it by its feet until she thumped her head with it, and wouldn't break when she threw it on the floor, but was pretty and natural enough to be loved devotedly. This, with a few soft, light balls, used to amuse her for hours.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send **15 cents** for each.

8779.—Ladies' dressing sacque. Cut in sizes 34 to 44 inches bust measure.
9791.—Ladies' shirtwaist. Cut in sizes 36 to 44 inches bust measure.
9684.—Ladies' apron. Cut in sizes 36, 40 and 44 inches bust measure.
9779.—Ladies' and misses' coat. Cut in sizes 16 years and 36 to 42 inches bust measure.
9777.—Girls' coat. Cut in sizes 6 to 14 years.
9762.—Ladies' two or three-piece skirt. Cut in sizes 26 to 32 inches waist measure.
9763.—Boys' suit. Cut in sizes 8 to 14 years.
9790.—Ladies' dress. Cut in sizes 36 to 44 inches bust measure.

Our Latest Fashion Book

Owing to the number of departments in THE PRACTICAL FARMER, we are unable to illustrate as many patterns as we would like; therefore, we publish each month a 32-page fashion magazine called The Fashion World, which is edited new from cover to cover each month, illustrates all the new styles and contains a serial story, hints on dressmaking, etc. This interesting little magazine costs 5 cents a copy when ordered alone, but we will send you a copy for 3 cents if you order it at the same time as you order a pattern. Send 18 cents for one pattern and a copy of the fashion book, or if you want to be kept in touch with all the new styles as they come out each month, we will enter your name for a one year subscription for our monthly fashion magazine for 35 cents. Address

FASHION DEPARTMENT,
THE PRACTICAL FARMER,
PHILADELPHIA, PA.

Homespun Yarn from Ithaca

Time to buy a thermometer if you haven't one, and resolve to keep the house not over 70 degrees in winter.

Be forehanded. Watch the little leaks in roof or radiator or plumbing. Many a little leak has caused plaster to fall.

More milk and cheese on the family bill of fare means less meat to buy and more money saved, as well as better health.

It's cheaper to use holders for handling hot pans than to burn dish towels, and even the extra laundering wears them out.

The Real Riches of Life

MARIA STONE.

The idea that it takes at least half a million to live comfortably, and that just being "well off" doesn't mean anything in this country, is causing many to take "a bigger bite than they can chew," and they are like overworked horses, absorbed in the load they drag. By the time they accomplish their end—if they do accomplish it—they are like a wagon seat with the spring all out of it. How much better to be satisfied with less money and to live a little as we go along. Doing cheerfully without is a fine achievement, for "things" have a tendency to rob us of both our peace of mind and the joy of living. "A man's life consisteth not in the abundance of the things which he possesseth."

Sunshine and air, and love and beauty are among the richest treasures of earth, and are the essential things of life, yet dollars never have, and never will, buy them. After due reflection we realize that, after all, it is the smaller things which make or mar our happiness, therefore keeping our heads and learning a little all the time is far better than trying to give the impression that we are a favorite son of a millionaire. We must keep to sane and normal standards of living; we can't go on consuming much and producing little. This is true of our material, mental and physical possibilities. So why not, once in a while, compose ourselves for reflection, so that in the evening of life we may have the memory of a past glorified by love and service? And that our homes may be real homes—not asylums—for there is nothing so precious as mental power and control over our own actions.

Pennsylvania.

Economy in Buying Clothing

1. It pays to buy good material and take care of it.

2. Avoid bargain counters. It often pays to shop "out of season."

3. Avoid extremes of fashion fads, etc.

4. Know kinds of materials, their characteristics, properties and qualities.

THINK BEFORE YOU SPEND.

Consider:
- Need for purchase.
- Use to which it is to be put.
- Appropriateness for that use.
- Suitability to wearer.
- Cost in relation to what you can afford.
- Budget your income. Make financial plan for future.

It is economy to make over garments when:
1. Materials are good enough to warrant making over.
2. Materials are appropriate in textures, color and pattern for purpose intended.
3. The cost of new material is saved.
4. The work of remaking is not greater than the cost saved in material.
5. Materials in hand can be utilized.

SUGGESTIONS FOR REMODELING.

Woman's long coat to:
Short coat, child's coat, skirt, one-piece dress.

Woman's suit to:
Misses' suit, suit for boy, dress.

Man's suit to:
Suit for boys; overcoat. Pieces used in quilt.

Woman's dress to:
Remodeled by combining with other materials; jumper suit with guimpe; girl's dress.

Wool skirt to:
Ripped, washed and recut: Coat for child, bloomers.

Wash skirt to:
Ripped and recut in prevailing style; middy, rompers, aprons, petticoat.

Adult's garment to:
Recut for child; seams overcast or flat fell.

Night gown to:
Slip-over protector for dress.

Man's shirt to:
Blouse for boy; apron with bib; sport shirt, short sleeves and collarless.

USING CAST-OFF TEXTILES.

Worn sheets:
1. If center is worn, remove worn strip and reverse two remaining pieces, overhand together. Hem outer edges.
2. Make sheet for single bed.
3. Use to cover ironing boards.
4. Tear into strips for bandages.

Pillow slips:
1. Make into slip cover for blouses. Make small opening center of bottom seam and allow it to slip over hanger.
2. Join two cases together and use as dress protector.
3. Use for bandages.

Worn table linen:
1. Use unworn portion in center to make lunch cloth, doilies, napkins, runners.
2. Cloth to cover table when set, or to cover foods.
3. Bandages.

Worn towels:
1. Wash cloths.
2. Padding for kitchen holders.

Pieces of woolen goods, percales, etc.:
Comforts, quilts, rugs, etc.

Stockings:
Dust cloths, kitchen holders, mops, "arm sleevelets."

Underwear, old carpets, old muslins:
Braided, hooked or woven rugs.

All scraps of textiles:
Paper manufacturing.

Uses for flour and sugar sacks:
1. Dish towels or cloths.
2. Curtains.
3. Kitchen holders.
4. Ironing board covers.
5. Lining for quilts.
6. Cloth to cover table when set.
7. Under garments.
8. Side runners to protect table cloth where the children sit.
9. Bibs.
10. Laundry bags or clothes pin bag.
11. "Protector" edges for quilts.

NOTE.—Rub "grease" into lettering on sacks, let stand several days, then wash.—*Edith Charlton Salisbury.*

Here's a soup recipe that comes from the Home Economics Department of the University of Wisconsin, as "popular among boys and girls in schools where hot lunches are served." We cannot see why it wouldn't go well with us "older boys and girls" as well. Try it.

CREAM OF PEANUT BUTTER SOUP.—(Serves 12.)—10 tablespoons peanut butter, 2 teaspoons salt, 1 cup hot water, ½ teaspoon paprika, 1 small onion, ½ teaspoon celery salt, ½ cup flour, 10 cups or 2½ quarts milk.

Bring the peanut butter, hot water, onion and salt to a boil. Add one quart of milk and heat, then add the flour, mixed smooth with an equal amount of cold water. Boil five minutes to cook starch, stirring constantly to prevent lumping or burning. Add the rest of the milk and bring to the boiling point. Season and serve.

Readers are leaders.

Brushing and pressing add life and good looks to a garment.

Washing silk stockings every time they are worn insures a longer period of service.

Use Dandelion Butter Color Now

Add a half-teaspoonful to each gallon of winter cream and out of your churn comes butter of golden June shade to bring you top prices.

All stores sell 35-cent bottles of Dandelion Butter Color, each sufficient to keep that rich "Golden Shade" in your butter all the year round. Standard Butter Color for fifty years. Purely vegetable. Meets all food laws, State and National. Used by all large creameries. Will not color the buttermilk. Tasteless. Wells & Richardson Co., Burlington, Vt.

Ro-San Rolling Bath Tub With Heater

Full size white enamel tub, nickeled 12-gal. tank. Closes up in space 3 ft. square. On castors—roll it anywhere. Heater attachment for kerosene, gasolene or gas. Water heats quickly, waste drains through hose attached to temporary or permanent outlet. Simple. Guaranteed. Write for catalog and price. Rowe Sanitary Mfg. Co. 11114 Rowe Bldg. Detroit, Mich.

Ask about Ro-San Indoor Closets and Washstands. No Plumbing Required. 30 DAYS TRIAL

GROCERIES AT ½ PRICE PUT OTHER HALF IN BANK

Sugar, Flour, Soap, Canned Goods, Lard, Tobacco and everything. Write at once for our "Special Get Acquainted Bargain Lists," also send names of five friends and we will mail them a free copy with your compliments. Tell them about it. We positively assure big savings. Order anything—no restrictions—orders shipped same day rec'vd.

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Have a sanitary, odorless toilet in the house anywhere you want it. The Bennett require no plumbing. Chemically disinfected. Strongly made of enameled steel with nicely finished wood seat. A necessity for invalids. Satisfaction guaranteed or money back. Descriptive circular sent on request. Bennett Homes (Equipment Dept.) 485 Main Street N. Tonawanda, N. Y.

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REAL COMFORT FOR EVERY HOME

Sanitary, odorless, convenient. Installed in 15 minutes in any part of house. No plumbing, drainage, sewerage. You owe it to your family, old folks and children to install one before winter. 30 days' trial on a money-back guarantee. Write for direct-from-factory prices. Address IDEAL CHEMICAL CLOSET CO. Box 115 Seneca Falls, N. Y.

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER IV.

Early the next morning Marise was at the door of the room that until very recently had been Mrs. Osborne's. It was a small room, but sunny and prettily furnished in old blue and pale gray. Freshly laundered curtains lay in a drawer, ready to go up, but, after looking at them, Marise wrote "curtains" on a pad she carried. The roll of silk and down on the foot of the bed was good enough for any casual guest, but not for the guest that was coming, and none of her embroidered linens was found to be sufficiently fair and fine for Mary's dressing-table. Marise had dreamed this day so often, the day she should prepare the room for her child, that the dream joy came flooding over hurts and difficulties and swept her down to the shops. Her gladness was not less solemn because it demanded this expression. Even the Three Kings bore gifts.

The clerks who waited on Marise that morning observed her curiously. She carried herself with an odd stillness; the very turns of her head were slow and quiet, as though she feared to disturb some wonder, and her gaze would fix unseeingly for long minutes on the fabrics they displayed. Then, at a question, she would start and seem to open to them misty depths of elusive beauty in the broken smile of her apology. She was clearly moving on the heights of a mighty experience, and her passing left a faint trail of romance.

At noon she was back with a cabful of offerings. They were carried directly to the little room, which Hannah had just finished cleaning.

"Mary Healy is coming here for a few days," Marise explained when her porters had gone; "so I bought some things. Just bring the stepladder, Hannah. I shan't want anything else of you."

Hannah knew, of course, that something was afoot, and maintained a hurt expression, generally designed to cover any situation. She had been dismally sure what was in store when she had seen a familiar card falling from yesterday's violets. Mrs. Jaffrey, who had slept all day with the violets in her arm, had waked up like a girl, and like a girl she had remained, deeply smiling and near tears and not hearing anything that was said to her. But last night, refusing coolly and for a second time to speak to Mr. Le Baron on the telephone, she had upset that theory, and now here she was turning the guest room upside down for this Healy young woman, who no doubt was trading on Mrs. Jaffrey's well-known tenderness for any one bearing the name of Mary, and perhaps had a design to get herself adopted. Hannah did not know that a heavy ache in the breast may be jealousy. She would have explained it as righteous disapproval.

Marise put up the new curtains with touching difficulties and blunders. Hannah's matchless care of her all these years had left her as ignorant of domestic implements as a princess in a fairy tale. She hemmed the curtains at varying lengths, she hung them wrong side out; severely logical processes brought strange, inexplicable results; the scissors disappeared with a persistent malignance that seemed human; and still the brooding smile never left her eyes. Sometimes she forgot to go on, sitting on her stepladder in a characteristic attitude, forearms resting along her knees, hands drooping, palms up and pressed together, as though to catch something falling from heaven. Hannah passed the door with increasing frequency, ready to give ungracious help if it should be asked, but Mrs. Jaffrey was never aware of her. At last Hannah could not bear it.

"If you'd let me get my hands on those curtains for five minutes, m'am, they'd be all right," she said severely.

Mrs. Jaffrey blinked at her like one awakening from happy dreams.

"Oh—aren't they all right?" She came down from the ladder to look at her handiwork, and Hannah took possession of it without further permission The discovery that Marise had hemmed the tops with ninety thread at first brought a dim comfort, proving her own vital importance in that household. Then, as she took in the other preparations, her heart froze within her.

Mrs. Jaffrey had laid a strip of priceless Italian cutwork on the dressing-table, and was unwrapping an ivory toilet set, slightly but exquisitely carved. On the bed lay a pile of embroidered towels, fit for royalty. Cologne, bath salts, French soap, a reading lamp with a painted shade, new novels, a blue leather work-box elaborately fitted out, emerged here and there from drifts of tissue paper. If she had found her own child, Mrs. Jaffrey could not have made richer preparation. She had been near adopting girls once or twice before, in Hannah's opinion, but it had never looked as serious as this. Active measures were necessary.

"Excuse me, ma'm, but I hope you don't think of leaving those towels for the young woman to use," she began with an air of reasonable concern. "Girls like that are as likely as not to use a towel to wipe their boots. They don't mean any harm; they are just ignorant of nice ways and fine things."

Mrs. Jaffrey's spirit had to come a long way back before she could take in what was being said. Then she smiled, deeply, disconcertingly.

"If Mary Healy wants to use the towels on her boots, she **may**," she said tranquilly.

Hannah, born to domineer, was always being obliged to back down and feel her way. It was very hard.

"You've known the young woman a long time, perhaps?" she threw out.

"Not so very. Well, yes I have!" The secret was at Marise's lips. She longed to cry out, "Why, Hannah, it is Mary! It is my baby! Can't you see that it is? Isn't it exactly the same darling little face grown up? And the same sturdy, independent little soul? Oh, Hannah, be glad with me, for the long search is over, I've found my child!" The words sang in her so loudly, it seemed as though Hannah must hear them. But Mary had expressed a desire that no one should know, and what Mary wanted was more important even than the rights of this faithful woman. Hannah was not likely to guess the truth, for she took the gloomy view of any situation as naturally as she breathed, and from the first she had been secretly convinced that Mary had met a horrible death. She had stood by during the long search, but sighingly, with pitying headshakes. And she had not known the little face so intimately that she would find it again in the grown girl. She should know very soon—sooner than any one except Hugh; but meanwhile Marise could make only an indirect appeal to her sympathies.

"I have a reason for being very grateful to Mary Healy," she said. "She has done a good deal for me. We must make her happy here, Hannah. I want her to like it."

Hannah removed the ladder to the hall and gathered up the scattered papers in a silence that promised ill for Mary Healy's happiness. Marise had not seemed to notice, but she sighed after Hannah had gone. Then, in the joy of shaking out and hanging up a white corduroy dressing gown, she forgot everything else. There had been a delicious tenderness in finding one of white corduroy—as though the little cloak had come back grown up. When the room was in order, and had been made sweet with roses and freesia, she could not believe in difficulties. Her dear baby was found, and was coming home to her.

She opened the door herself when Mary rang, and so saw her before the girl was aware. Perhaps Mary had just come from another hard scene, for there was a hurt sag in face and body and her lips still carried the shape of some hot protest. Then, seeing who it was, she straightened up to her role.

"Well, here I am," she said with a brisk imitation of her usual friendly manner.

"Here you are!" The joy would come out. "Oh, little Mary, here you are!" Marise folded her arms about the child, but, feeling her resistance, let them fall again. "I must be wise," she was telling herself under her surface talk as they went up-stairs together. "Oh, I must be very careful!"

It was heartbreaking to have to be so careful! She wanted to draw Mary about the room, showing her the pretty new things and revealing to her, mutely but every moment, what this reunion meant; to tell her, little by little, the story of the lost years and to feel opening between them the exquisite intimacy that was their right. But Mary was shut against any allusion to the past or to the bond between them. She had come defended at every point, her gallant bearing stiffened to defiance, the old beaming good-will hardened to a hostile cheerfulness. She would not seem to notice the pretty room, and her attitude made it clear that she was not going to open her bag while there was any one present to look at her things, so Marise soon had to leave her.

"Don't dress for dinner unless you want to," she said at the door. It was the sort of thing one said to any casual guest, and she could not go like that. She turned back and opened a drawer, motioning Mary to look in.

Mary suspected some trap for her emotions, and came with exaggerated nonchalance. The battered old doll within held her eyes, but she made no movement to touch it.

"That was your beloved Doodoo," said Marise, smiling an appeal.

Mary turned away. "Mamma bought me lots of dolls," she said. "Whole families of them. She's always given me everything I ever wanted."

Marise closed the drawer. "Oh, yes. She has been wonderful to you," she assented.

"You bet. And I mean to stick to her," said Mary with emphasis.

Marise went away without answering, looking more remote and fine-lady than she knew, but presently, when the sick ache of her whole being had died down, understanding brought comfort.

"Why, she is only being loyal, poor little soul," she thought it out. "Fiercely loyal. And she is afraid! That's it—she is afraid to yield one inch. Oh, she is fine, she's fine; it took force of character to stand me off like that. My little girl! Oh, but I must be careful!" Though she felt the fineness of Mary's loyalty, she had no least intention of remaining shut out. The long search could not end like that.

And so they faced each other at dinner like any two polite acquaintances. Mary was perfectly ready to talk so long as the one subject was avoided, and the big world of the office gave her an inexhaustible theme. Mr. Engel's temper, which had every one but Mary terrified, and Mr. Week's jokes, which Mary returned in kind, revived some of the girl's usual glow; she could not long forget that it was fun to be Mary Healy! Marise, perhaps, did not hear it all, but she kept the amused intent air of a perfect listener, and made no forbidden allusion. It pleased her to see that Mary was not in the least in awe of Hannah, though the latter, by a cast iron rigidity, was doing her humble best to make her disapproval felt. When she had finally left the room, Mary looked after her with an appraising eye.

"Old pie-face seems to have a permanent grouch," she observed, then went serenely on with her theme—the approaching marriage of Mr. Week's private secretary—without noticing how she had taken her mother's breath. Marise, accustomed to having all her appurtenances respected, was weakly glad that no response was asked of her.

"She's twenty-six, which seems to me pretty old to get married," Mary was saying; "but then, my gracious, he's over thirty. I'm not in line for her place, of course—I'm too young; but I bet I could get it within two years if I wanted to. When I set out for anything, I'm pretty apt to get it. Mr. Weeks told me once that I was first cousin to a steam roller." That made her laugh. "He's always calling me something new. Mrs. Jaffrey, I don't see what girls do who haven't a nice jolly office to go to every day, I'd die. Sunday always seems to me about fourteen hundred miles long."

If there was a defiant intention under the words, Marise was not going to recognize it. Don't you get very tired?" she asked.

"Oh, yes. But I go to a show or something and I laugh it all away. Mama and I are great on shows. We never miss anything that's worth seeing. Mama's such fun at a real play. She gets so mad at the villian she almost climbs over the footlights to give him a piece of her mind. One night she yelled right out—'You let that young woman be, you sneak!' Laugh—I thought I'd die. We know a press agent—he's a very particular friend of mine, and he's always taking us to things. He's about the leading press agent on this coast. He has met two Presidents of the United States—talked with them, you know. He says he's at home on any level, from the White House to the corner grocery. We see a great deal of him."

Mary was defying her again, displaying the richness of life in the Healy family, and Marise, casting about for some competing richness to offer, felt humbled and dismayed. The life she led seemed very dull by comparison.

"When I was a girl, I had good times out of tennis and skating and riding," she was beginning, but Mary cut her short.

"Nothing to it," Mary declared. Mama and I go to the seashore on my vacation, swell places like Narragansett and Atlantic City, where we can watch the girls at all those things, and, believe me, it's some hard work. And what have they to show for it. They don't even get a whole man apiece to do it with. There's always fifteen girls and one measly little fellow to divide among them." Mary was generously ready to expand any subject to any depth. She loved to hold forth. "I know girls, Mrs. Jaffrey, and I know perfectly well that when they go off doing things by themselves, it just means that they can't get hold of any fellows. Now you take me—there's bunches of men in the office, perfectly fine fellows, and though we don't have any nonsense in business hours, it's there all the time, and it's jolly. It's jolly if you just meet at the water cooler for half a second; it makes your head go up and your heels go down, puts some zip into things, do you see? I tell you, for girls, life without fellows is—well, it's like these denatured imitations of coffee. All right enough if you can't get the real thing. But, gee, I don't see how they stand it!"

Marise had never felt her child so hopelessly lost as in this moment, when they sat with only a few feet of mahogany between them. She shaded her face with her hand and tried in vain to find something she could offer. Love, a mother's love, was no rarity to this girl. Marise's dream had been of lifting, healing, helping—stooping to any depths to gather up a stray life, fill all its needs with love and shelter and ease. But Mary looked at her from a level, if not from a height, and coolly demanded, "How can you match what I already have?" Studies, duties, companionship, would make a pallid program beside Mary's adventurous days.

"Do all the girls in the office feel about it as you do?" she asked presently.

Mary considered, looking very handsome in her young earnestness. "They're dubs, most of them," she decided. "They haven't got any ambition. They just want to keep their jobs till they can get married. And they're always complaining. They think they're put upon, or some one has been mean to them, or something. Not all, of course. Two of our girls are great. But girls in general don't put their teeth into their work, Mrs. Jaffrey. They just nibble."

Marise lifted her head with rather a wan smile. "You have thought about things a great deal, haven't you? When I was your age, I wasn't half as wise as you are. Life was all good times and feelings—happy feelings, usually, and lessons, of course—oh, lessons without number. I never had time to think—or any real experience to think about, I dare say."

"Well, mama thinks a lot, and she has always talked to me as she would to any one. We talk things out just like two sisters." Mary never missed a chance to emphasize the bond, and Marise felt a surge of impatience. It left her shocked, ashamed. That was no way to feel on the night of Mary's return!

"We will have our coffee in the other room," she said, and rose to get away from the unworthy moment.

A deeply cushioned seat faced her couch corner by the fire, but Mary chose a stiff chair, uncomfortably carved, and sat bolt upright, as though to avoid any effect of permanence. Marise said nothing until Hannah had taken away the coffee cups; then she turned to her child.

"Now, Mary, I'm going to tell you the whole story," she said.

Mary was in a mood to object to anything, but a new force in her mother's manner suggested that she had gone far enough for one night, so she only sat a little straighter on her hard chair. Marise took up the tale from her first meeting with Arnold Jaffrey, telling it with quiet candor, neither shielding Arnold nor softening the blunders of her own importunate youth. When at last she came to the terrible day, Mary had forgotten everything but this intense drama of which her unknown self had been the heroine. She moved to the edge of the chair, then, quite unconsciously to the rug at her mother's feet, and her lifted face brought back the little Mary so vividly that Marise had to clench her longing hands and pray for wisdom. She let herself bend a little nearer, leaning on her forearms, but she kept the appeal out of her voice by main strength. The tale went on almost automatically.

"You know the farm part of it," she concluded, when she had told of Arnold's death and of her agonized search through the wreckage for some trace of her child. "We can put together the whole story now, except for what happened at the Long Island ferry. We have to guess at that—but I think I can see it. When your father had telephoned the inn and found that it was closed, he must have stood there in the ferry house, debating, you and Mona beside him; and then an acquaintance passed and spoke to him. We know that. It would have made him very uneasy; some friend might come next who would ask questions, and he cared about appearances more than anything on earth. He probably grew impatient and excited, and Mona, of course, had been longing for an excuse to go out to the farm—she had been thinking of nothing else since she saw her sister's advertisement, three or four days before. The other servants had known that she was troubled, and once Hannah had found her crying. She could tell your father that it was a nice, wholesome place, and he would have jumped at the chance to escape possible embarrassment, to get the whole situation off his hands. He was like that, a very nervous man.

"They didn't take a cab from the ferry—I suppose none happened to be there. Either he put them on a car and caught the boat himself, or he took them across the city and then came back. It was the crowded hour, every one streaming home, and so many with babies. No doubt he told Mona to meet him in town again in a couple of days. And he did not write down the address of the farm because he never needed to—he could remember even telephone numbers. He was a little proud of that. He must have gone down by himself to the duck club. That was Monday night, and on Wednesday morning he was dead. A special car and engine took me out to the wreck—that was the first journey I made to find you, Mary. For years after it seemed as though I lived on trains, always going to see or find some child that might be you, trying not to hope, and then, on the journey back, trying not to despair. To this day I can't endure going on a train. The very smell of the cinders makes me feel faint. I don't give in to it—I go when I must. And perhaps it will be different now. Oh, do you realize what a miracle it is, finding you?"

The appeal leaped out in spite of her. Instantly a veil dropped, the eager spirit withdrew. Mary, casting her eyes about for some way of escape, saw the framed photograph by the chimney, and rose to look at it.

"Was that me?" she asked.

"Ah, my dear, that was you seven months before, and so poor; it looked like any child. I had never had a good picture of you. I was just going to try again when you went away. A really good likeness might have found you for me. In that case—let me see"—she smiled consideringly at the averted face—"I suppose you would now be at college. I don't believe you would have wanted to come out at eighteen, as I did. Girls are getting a better standard. Perhaps you would have been studying for some profession."

"And I'd be a lidy instead of a woyking goyl," observed Mary.

The note of mockery chilled Marise unbearably. She shrank into herself, and Mary wandered about the room, examining things without really seeing them. Presently she yawned with intention.

"If you don't mind, Mrs. Jaffrey, I guess I'll go to bed," she said. "You see, I have to be up early."

Marise went up with her. She knew in every fiber that the girl wished she would not, yet how could she help it? This was Mary's first night at home! She tried to make here presence casual and unobtrusive, but she had been an important person for so long that she really did not know how. And when she saw that, while her own room had been prepared for the night, nothing had been done in Mary's, she forgot her difficult humility and rang with emphasis for Hannah.

"Miss Healy is going to bed now, Hannah," she said, a faint surprise in her eyebrows. Mary, come into my room while Hannah is getting yours ready."

Mary, swept along like that, had to come, but she registered her reluctance by taking her stand near the door and refusing to see anything. She would not even look at the long frame holding her own various baby pictures that stood on the chiffonier beside her. There was a dull flush in her face, a heavy droop of secret trouble just back of her defiant alertness. Poor child, working it all out by herself, with two loves struggling for possession of her, and the bitter lament of her adopted mother tearing at her good young heart! She was worth winning, this difficult daughter. Marise roused herself to pour out friendliness, to warm and draw the girl as she had drawn other girls for years past. She had known so well how to do it—the vivid interest, the friendly and natural manner, the glow of good will. It was so truly what she felt in general that she could reproduce it even when her heart was a little too tired to participate. She seated herself in a deep chair, silken knees crossed, and laid out plans like a fairy godmother.

"We must go to the theatre some night soon," she said. "And I have cards to various things that you might like, private views and illustrated talks. And there is the automobile show. Do you think you could learn to run a car, Mary? I mean to try it myself, this summer." The plan was born that moment, and a thrilled sense of new freedom came with it. "There are so many pleasant things to do! I have not had time to think about them for years and years. Why, Mary it is going to be like a new lease of life, having you off my mind!" Her laugh begged an answer, but the young face was stonily unresponsive. Marise pushed on.

"I have a dear old summer home up on the sound that was my father's. We will run out there some spring Sunday, if you like. Usually I rent it, but this year I shall stay there." That plan, too, had just sprung into existence. "It has a splendid beach, if you care about swimming. I used to run down and jump in every morning before breakfast, when I was a girl." The memory brought back a salty breath of youth, but Mary was unmoved.

"I should think it would have been lonesome," she said. "I like a jolly crowd when I go in."

Marise smiled to show that she was not dashed. "We can have a jolly crowd there if you like," she offered. "The big room would be splendid to dance in. Or we could have a tea party. Let me see—tomorrow is Saturday; haven't you friends you would like to ask in to tea Sunday afternoon? They would not have to know why you were staying with me—I have girls here so much. We could send them cards to-night. Should you like that, dear?"

Mary seemed to be holding herself physically tight shut. "I have all the company I want at home," she said, scarcely moving her lips.

Marise suddenly rose and took the upper hand. "Oh, come, Mary!" She spoke strongly. "You don't have to harden yourself against me because you are loyal to Mrs. Healy. Can't you be big enough to take us both in?"

The unexpectedness of the attack nearly broke through Mary's guard. A flood of distressed color betrayed a secret weakness, her lips trembled. Marise lifted her arms, all her starved motherhood in her shining eyes and her broken smile, and the girl wavered toward her.

"Miss Healy's room is ready, m'am." Hannah spoke from the doorway, irony in her prim voice; the very way she stood, addressing Marise and ignoring Mary, expressed an acid comment on young persons of inferior birth who pushed their way into the good graces of their superiors. Marise was conscious only of the grievous interruption, but Mary stiffened into the street child, the girl who has fought her own way. With a hand on her hip and an upward thrust of the chin, she looked down and up Hannah's Victorian person until the latter retreated in flustered wrath. Then she gave a careless nod in the direction of Mrs. Jaffrey.

"Well—I guess I'll hit the hay," she said, and went off with something of a swagger.

Marise's arms had fallen limp at her sides. Forlorn tears gathered to her eyes.

"Oh, I must be wise, I must be patient," she breathed, wiping them away.

(To be continued)

Temptation

FARMER.—What are you doing in the orchard?

BOY.—Nothing, sir.

FARMER.—Aren't you trying to steal some apples.

BOY.—No, sir; I'm trying not to steal 'em.—October Boys' Life.

Tom, Tom, the piper's son,
Stole a pig and away he run.
Thomas, leave that pig alone,
Join a pig club, raise your own!

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Breeding Sheep for Profit

(Concluded from page 310)

is too cold for them in such a shed, but the roof should not leak rain or snow. There is no use of a floor winter or summer. In the late fall put a load of chaff or straw a foot deep in the shed, and no more bedding will be necessary for almost half the winter. With the winter's accumulation there will be some fine fertilizing material, none of it having been wasted, while a good bed will be furnished all the time without trouble of cleaning and rebedding every few days. Two or three times during the winter will be enough filling.

Do not shear very early, as a few hot days in May will not make them suffer as much with their wool as a few cold days and storms if shorn. About the first of June is a good time, as warm weather can then be expected, and the wool has raised from the skin, making it easy to shear. Some sheep will stand up on a barn floor and scarcely move; others have to be tied like a calf, and still others struggle so they have to be tied and laid on a bench. One should be careful about clipping the hide, as that will make them struggle. At the time of shearing keep a sharp knife at hand and examine each foot. Most of them will have the hoof grown under. This should be pared off, as dirt will get under and make a foot sore. On stony land this will not occur. Also have some good pine tar at hand and with a soft swab put some up each nostril. They will not object to it and it will set up a good sneezing.

In conclusion I want to impress upon the mind of the reader a simple remedy for exterminating ticks. Let the sheep be well fed at all times. It is cheaper to keep them fat than poor. By keeping sheep fat ticks cannot exist, as a fat sheep constantly throws off so much oil on the wool close to the hide, that ticks cannot exist, and being great gluttons, will soon starve to death. On a poor sheep, with dry, lifeless, light wool, they will become so numerous as to almost consume her. There is no need of it, and a poor sheep is not a profitable sheep at any time of the year.

Illinois.

To Cure Scours in Calves

Indigestion or inflammation in the stomach is the common cause of scours in calves. If the calves are watched closely and treated at the first indication of scours, the cure will be much simpler. Always begin the treatment by cutting down the ration, thus giving the calf a chance to rid itself of the irritating material.

In slight cases, after one or two feeding periods have passed, the calf will appear normal and full feeding can be gradually resumed. In more obstinate cases, however, it may be necessary to give a physic of 2 or 3 ounces of castor oil in a little milk. Formalin, ½ ounce in 15½ ounces of water as a stock solution also is recommended. This should be given to the calf at the rate of a teaspoonful of the solution in each pint of milk fed.

But, since the "ounce of prevention" is all important, the following hints to calf feeders are suggested by dairy specialists at the New Jersey State Agricultural College:

1. Always have milk at the same temperature when feeding. Different temperatures will cause scours. The correct temperature is blood heat, or 98 degrees Fahrenheit.
2. Keep all feeding pails clean and sweet.
3. Do not overfeed. It will cause scours.
4. Keep calves in a bright, airy pen. Sunlight is essential to the growth of vigorous calves.
5. Always supply clean, fresh water.
6. Salt aids digestion. Keep it before the youngsters at all times.
7. Pens should be warm but not hot and damp.
8. Do not crowd too many calves in one pen.

STRAIGHTENING OUT THE TANGLES

EDGAR L. VINCENT

THIS morning your little one brings you a handful of string. "Won't you untangle it for me, mama? I have worked at it until I am tired, and the more I work the harder it gets tangled up." And you sit down with the snarled-up cord in your hands and begin to pick it apart. But there are so many knots! You yourself grow tired and impatient, and it may be at last you send the little one away disappointed. "Get another string, darling," you say, and toss the tangled threads away. It is too much work to straighten them out. Still, a few moments more of patient effort, and the cord would have come out all right. It may be you stopped just when success was nearest.

Life has many a tangled thread. You see it more clearly in the world of today than ever before. Nations are tied up, a perfect mass of discord. Men seem to be involved one with the other for all the world like the string the little one brought you. And ever the cry comes, "Help us to straighten out the tangles!"

Are we doing the best we can to do it? Do we sit down patiently and earnestly with these brothers of ours and strive to pick out the knots and straighten out the snarled threads, so that the line of life shall once more lie true and strong, ready for future service? Or do we say petulantly, "Go away! Straighten out your own tangles! I want nothing to do with it!"

Looking out over our own country just now we see classes lined up against classes, men in some kinds of business pushing others aside and grasping rights and privileges that certainly cannot be called their own. What a tangle it is! How shall it be made straight? Certainly not by selfishly trampling down those who do not at the moment agree with us. And just as surely will there be failure if we strike down and hurt and struggle with those whose interests are involved with our own if we but knew it. No. Problems will not be settled that way to stay settled. The blows we strike may crush and silence for the moment, but all too soon the fight will all have to be waged over again.

This is the way of the Christ. Love one another! Do as you would be done by. Sit down with the men who do not see just as you do. Be good and kind and true and unselfish. Yield where it is fair to yield. Go the other mile. Hold your cheek up to be smitten, not once nor twice, but a hundred times, if need be; but be sure that in a little while, if you keep the Christ spirit in your heart and seek to draw that same spirit out in the one who once was your enemy, you will have won him to you and conquered yourself.

Tangled threads! Do not cut them with the knife of hate; that spoils the beauty of the thread. Tangled threads! Do not draw the knots tighter by impatience or intolerance. Straighten them out in love, gracefully and gently! So shall strife and discord and sin be banished out of the world and truth and love and righteousness come to reign in its stead!

Wheat Rust and the Barberry

In the work of the United States Department of Agriculture for the eradication of the common barberry as a defensive measure against wheat rust, the survey of the principal cities and towns has been practically finished. A farm-to-farm survey, however, is really just begun in portions of the 13 states included in this campaign to locate the thousands of cultivated and escaped bushes on farms. A re-survey of cities and towns also is being made to guard against sprouting and to find isolated bushes which have been overlooked.

Preliminary inspections showed that it would be necessary to survey every farm in this territory east of the one hundredth meridian. This survey was started in some states in 1919 and in the others in 1920. Eleven counties on the eastern border of North Dakota, seven on the eastern border of South Dakota and 13 counties in southeastern Minnesota have been surveyed, and some work done in five others.

Fourteen counties in northeastern Iowa and the equivalent of 15 in Nebraska have been covered by the rural survey. Six counties near the border of Illinois and Wisconsin have been covered, and in them cultivated barberries on farms and widely scattered escaped bushes have been found more abundantly than in most states. Nineteen counties in Indiana, six in Ohio, and three very large counties in southern Michigan have been cleared.

The results of the survey show that there were cultivated barberries on one or more farms in every county. In some counties there were hundreds of farms with cultivated and many with escaped bushes. The number of mature fruiting bushes and the hundreds of scattered seedlings indicate that within a few more years many of these counties would have had still more severe rust injury to wheat. Numerous cases of the direct spread of stem rust directly from barberries to grain were mapped and used as demonstrations to farmers.

In Colorado, Wyoming and Montana, more recently and more thinly settled, barberries were less numerous. The survey of the principal areas of Colorado supposed to have barberries has been completed, except an irrigated district south and east of Platteville and the river valley from Fort Morgan to the Nebraska line. All necessary surveys and one re-survey for sprouts have been made in Montana. All cities and towns of eastern Wyoming have been inspected and plans are on foot for a rural survey of irrigated areas there.

Fall Road Work

WM. J. WATTS.

Every spring as we travel over dirt roads we almost exclaim to ourselves, "What a shame this or that had not been done in the fall to prevent damage." Sewers are left closed or in condition to become clogged, and thus throw a stream of water down a wagon track. Deep ruts form during the freezing and thawing of fall months and then if not dragged full before snow falls they are dangerous for both horses and machinery; they make mudholes in thawing weather, and by holding water in the early spring they make a soft roadbed that is very slow to dry.

A carefully crowned road with a smooth and hard surface, formed by dragging when a little damp, turns the water and does not so quickly become deeply muddy when thawed or kept continuously wet by rains and snows. Fall work on dirt roads is for prevention and is usually neglected because it is not immediately necessary, but there is no more important time to plan for economy in up-keep.

Pennsylvania.

Pigs on Rape Pasture Need Some Tankage

Tests in hog feeding conducted by W. L. Robinson, of the Ohio Experiment Station during the past season show an advantage of feeding some tankage as a supplement to corn to pigs on rape pasture. Some farmers have believed that rape pasture alone is a satisfactory supplement for corn.

Pigs weighing 36 pounds and fed a ration of corn 19, tankage 1, parts by weight, for 18 weeks on rape pasture weighed 171 pounds at the end of the experiment.

A similar lot of pigs full fed on corn alone but on rape pasture for 18 weeks made a final weight of 146 pounds.

The average daily gain for the tankage fed group is 1.1 pounds and nine-tenths of a pound for the lot full fed on corn alone.

The tests show that rape is a valuable pasture for swine, but it will not fully supplement a full-fed ration of corn.

Live stock should be protected from late cold rains during the fall months. Much loss can be prevented by providing shelter at such times. Cold rains are especially severe on young cattle, sheep and pigs. They should be given protection even though the older animals must remain outside during severe weather.

If fresh air is good to cure the sick, why not use it to prevent illness?

Farm Happenings

AS TOLD BY THE BOSS.

The first crop of pigs have gone to market. They averaged about 200 pounds the first week in October. The balance of the crop will not be ready for some time. Part of the hogs that are left are in the corn field and some are fed in dry lot. It seems to pay to get the largest pigs ready for market as early as possible on account of the higher price received.

I recently talked with a neighbor who was "hogging down corn" for the first time. He was not feeding his pigs a protein feed in addition to the corn. I convinced him that it would pay him to buy some tankage even though it cost in the neighborhood of $120 per ton.

The fall pigs are getting a good start in life during this warm weather. Any growth that can be made during the early fall months will help to keep them growing during the winter.

A number of hogs were troubled with lice, but a good spraying with crude oil has cleaned them all up in good shape. It does not pay to let them go into the winter covered with lice.

Some of the spring gilts have been doing well since they have been sorted from the balance of the spring crop. These pigs will be grown out rather than fattened, as we are more anxious to have them gradually developed.

The field of rye is coming along in fine shape. The recent warm weather will give it a good start and also supply a considerable amount of green feed late in the fall. It is also a good plan to make preparation for more pasture early in the spring.

Some of the corn was frosted before all the silos were filled. We added plenty of water and so expect no bad results from the use of corn that seemed pretty dry. It is more important to have the corn well matured than to have all the leaves green when it goes into the silo.

Some of our horses are getting old and will have to be replaced before spring. We have the feeling that horses will sell high next spring, but that they can be purchased at a reasonable figure during the winter. We plan to buy some good young horses during the winter and put the horses that we want to get rid of on the market in the spring when there is a strong demand for horses.

We have culled the lambs and put aside for the butcher all the ewe lambs that are not good enough to keep in the flock. These will be fattened and sold to the butcher as soon as they have improved in condition.

A neighbor's small flock of sheep are kept in a pasture where there is a lot of burdock. These sheep are completely covered with burrs that will never come out. After they are sheared in the spring he will wonder why the wool from his sheep is not in as strong a demand as a clean wool.

Fall Care of Heifers Pays

Shortage of feed and exposure from cold and wet will arrest development of dairy heifers, say good live stock men; heifers, therefore, that are not already in the best of condition, will amply pay for extra attention this fall. If any are poor in flesh they may be given two pounds daily of a mixture composed of two parts each of corn and oats and one part of oil meal, or a similar combination. Good legume hay will work wonders in promoting thrift, continued growth and in producing proper physical conditions for calving.

They should have continued access to pasture; but the pasture and available green feed, if not already short, may be nearly worthless after a few hard frosts.

As an insurance against having their growth checked, the young stock should be encouraged to come to the barn at night for a little grain and a feeding of good clover hay. If this is not feasible, a good shed where they may get these comforts should be provided. Unthrifty calves and heifers that have developed long, rough coats are likely to be found lousy when taken up in the fall. Before such stock will thrive, the lice must be destroyed. The long hair must first be clipped and a louse spray mixture applied according to directions.

"To Sell or Not to Sell" Sheep

"There is no money in sheep with wool at 20 cents a pound, so I sold my ewes at $6 a head."

This was the statement of a Minnesota farmer who was so enthusiastic about sheep when wool was around 55 cents a pound that he purchased additional ewes at a price around $15 a head.

"This farmer was certainly correct," says a University of Minnesota expert, "when he said there was no money in sheep with wool at 20 cents, provided the market for lambs is not high enough to offset the low price of wool. However, I believe that when one can buy good ewes at $6 a head, it is a good time to stay in the sheep business. If one has knowledge of sheep and has the necessary feed and fences he should certainly buy a few ewes that the neighbors wish to sell at around half of the previous prices or less. At any rate, it is certainly a much better time to stay in the sheep business or to get into it, then when prices of ewes and wool are abnormally high. The sheep and wool market cannot go much lower and if sheep growers get discouraged it will not be many years before it is much better. Then those who now wish to sell their breeding stock will want it back."

Corn Silage for Fattening Steers

In recent years, through the efforts of agricultural experiment stations, corn silage has come to be the leading feed in profitable cattle feeding. By trials at these stations, it has been demonstrated beyond any question of doubt that steers can not be fed with any assurance of profit without the judicious use of this feed.

The Pennsylvania State College was one of the first experiment stations to demonstrate the value of corn silage when fed in unlimited quantities to two-year-old steers. A summary of the tests conducted at this station for the past several years shows the greatest net profit on steers fed all the silage they would eat, plus two and one-half to three and one-half pounds of linseed or cotton seed meal per head daily.

In starting cattle on silage, the mistake is often made in giving only a small amount and gradually increasing until they are getting all they will eat. If silage alone is to be fed, the cattle should receive a sufficient quantity to make proper gains or finish. When silage alone is fed with a portion supplement, a small allowance of some dry roughage (corn stover or oat straw) should be fed. Cattle on a full feed of silage will not eat much dry roughage, but crave a little and seem to do better if fed a small amount.

Steers younger than two years old do not make satisfactory gains on corn silage alone. For this class of cattle some grain in addition to the silage should be fed to get the proper finish.

Increasing the Efficiency of Corn for Cattle Feeding

It has now been known for some years that corn by itself is not an economical cattle feed. The reason for this is that about one-half of the proteins in corn are deficient in some of the essential compounds needed to produce growth. In order to make corn more efficient, it is therefore necessary to mix the corn with other cattle feeds which contain an abundance of those compounds which are lacking in corn. Experiments along this line have recently been carried out by the United States Department of Agriculture. It has been shown that when certain concentrates, such as coconut press cake, peanut press cake, soy bean press cake, or cotton seed press cake are added to the corn more rapid growth results and the mixture of proteins is much more efficient and economical than the proteins of corn alone. It is therefore very important that the cattle feeder should so mix his diet that he can get the greatest amount of growth from the least quantity of protein used, since the protein is the most expensive constituent in his feed.

It has been found that about 40 per cent. of cocoanut press cake, or 25 per cent. of soy bean press cake or peanut press cake, mixed with corn, furnishes a very efficient diet. It is not safe, however, to add so much cotton seed press cake, since cotton seed is frequently toxic and is ordinarily not fed to cattle in amounts of more than 3 or 4 pounds a day. The experiments which have been performed indicate that when corn is properly mixed with the press cakes mentioned above, about twice as much growth can be obtained on a pound of protein from the mixture as on corn proteins alone.

While exact data has not been obtained, the experiments thus far show that great economy can be achieved by mixture of other protein foods with corn.

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The Practical Farmer

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Some Points on Growing Crimson Clover

By A. E. GRANTHAM

AT present the culture of crimson clover is confined largely to the eastern part of the United States, particularly New Jersey, Delaware, Maryland and parts of Virginia. The crop is best known in Delaware, where it has been grown for nearly a generation with such success that the "scarlet" field is the most conspicuous feature of the landscape. While the culture of crimson clover is somewhat localized there is no doubt that the cultivation of this valuable legume may be extended to other parts of the country. It cannot be said that the section now growing crimson clover has all of the necessary requirements of soil and climate. True it is that the mild climate produced by the proximity to coast and inland bays has been favorable to the success of crimson clover. Yet, on the other hand, the soils of this section, aside from their physical properties, a sandy loam, are often of low fertility and not in a condition to produce crimson clover without some attention to fertilizers. Crimson clover is not a new plant to this country. It has been tried occasionally in many sections of the country and with varying success. The unsatisfactory results were often due to poor soil preparation and to failure to sow at the proper time. In some cases these failures were attributed to lack of adaptation on the part of the plant. Where the clover grew successfully the crop was often discontinued because of the difficulty of saving the seed or of purchasing a new supply. These conditions are commonly met with in the introduction of a new crop and are more often the result of misunderstanding the requirements of the plant than the lack of adaptability.

It is commonly supposed that crimson clover winter-kills easily. On well drained soil crimson clover well established will withstand considerable cold without damage. So far as climate is concerned, crimson clover can be grown with good success anywhere south of Mason's and Dixon's line. In regions of more severe winters it will thrive providing snow covers the ground during mid-winter. Crimson clover is successfully grown as far north as the northern peninsula of Michigan, where the heavy snows protect the plant. The writer has seen excellent fields in central Indiana. The entire Atlantic seaboard from central New Jersey southward, is naturally well adapted to crimson clover, while in all of the Southern States the crop can be brought into successful culture. In any section where there is sufficient rainfall during the late summer and early fall, crimson clover may be expected to make a growth that will be of decided benefit to the soil even though the plants do not survive the winter. Since a large portion of the nitrogen is taken up during the vigorous fall growth, the crop, even when winter-killed, is of value to the land. Most of the failures heretofore reported, even in sections where the clover is known to flourish, have been due to careless seeding, particularly lack of attention to the moisture conditions of the soil at time of sowing. There must be enough moisture in the soil to germinate the seed and to promote growth until the plants are able to draw moisture from below. When there is barely enough moisture to sprout the seed a sudden dry spell will kill the clover. If the last cultivation of the corn follows a good rain, seeding just ahead of the cultivator will insure good results. A one-horse A-harrow small enough to pass between the rows, is an excellent implement for sowing the seed, as it has less tendency to cover the seed too deep.

While crimson clover is an annual, it is not successfully sown in the spring. If sown at this time the plants do not make normal growth before hot weather, which causes them to ripen prematurely. For the best results crimson clover should be sown in the latter part of July or the first of August. The character of the soil should determine to some degree the time of sowing. A stiff clay soil, or a soil of low fertility, should be seeded somewhat earlier than a rich loam. Further, the more vigorous the plant before winter sets in, the less likely are bad results to come from severe freezing. Thick seeding on soil in good condition will often offset the tendency to "heave" out.

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Bad Habits of the Hen

J. RAYMOND KESSLER

THERE are few more discouraging things in handling the poultry flock than to find the flock practicing some of the bad habits known to poultry, especially if the matter has been let go until practically the entire flock is affected. To the beginner it often seems like the last straw, after overcoming all the troubles of production, to find that this apparent cussedness of the fowls shows up in the flock. There are, however, ways and means of overcoming and, to a great extent, insuring against such occurrences. It must not be thought, however, by those who have never experienced these troubles, that they can be taken lightly, for, allowed to grow, some of the habits will become as troublesome as a disease in the flock. The writer must admit that he has felt very discouraged at times in his early experience with fowls through finding bad habits breaking out in the flocks.

Bad habits make their appearance in the form of egg eating, feather pulling, cannibalism and toe pecking. One of the prime causes is close confinement with nothing to do. Hens, like ourselves, if kept busy, find little time to hunt trouble; but leave them idle, especially closely confined, and something is sure to happen. The truth of this is proven by the fact that flocks on free range very rarely show any signs of this trouble and very often if the bad habit has not obtained too firm a hold, free range for the flock will prove the best remedy. However, a fowl that has learned one of the bad habits and practiced it for a time, will continue to do so no matter what the conditions, and, what is more, one bad bird will soon teach all apt pupils of the flock. Such a fowl should be killed at once.

Egg eating is one of the bad habits most frequently found. It is usually acquired through the hens obtaining a first taste from eggs accidentally broken on the floor or in the nests. There are very few hens that will not eat a broken egg and it does not take many accidents to teach the hen how to break the egg herself. The idea should be to prevent the fowl from getting the first few samples. Some hens will become so expert at eating eggs that they will leave few telltale marks on their feathers. However, if closely watched, most of those committing the act will show some trace of the yellow of the egg about the mouth. Such fowls should not be fooled with, but killed at once.

Lack of sufficient nests, or allowing the broody hens to occupy the available nests, is a very frequent cause of egg eating. The reason for this is that the hen desiring to lay, either lays on the floor where the egg is kicked around and broken, or else she attempts to crowd in with the broody hens, resulting in fights and broken eggs. Nests too close to the floor, where the hens can scratch in them, is also a cause. The males, as well as the hens, are likely to acquire the habit of egg eating.

As a preventive, have at least one nest for every six to eight hens where kept in flocks of a hundred or more and allow still more nests in proportion for smaller flocks. The nests should not be closer to the floor than two feet. They should be about a foot square and the best type is the open front, with back, sides, bottom and top solid. The nests need not be dark, but if the owner prefers he may have the nests face the wall instead of facing out into the pen. All broody hens should be removed daily and penned up so as to keep the nests open for the layers.

Eggs loaded with pepper, glass eggs, etc., scattered about the floor of the poultry house as a cure, are ineffective. The frequent practice of feeding egg shells is one of the best ways to teach a flock egg eating. Crushed oyster shells is the safest egg shell material to feed the flock.

Feather pulling is likely to be found in all ages and sizes of fowls. It is most frequently developed in flocks of young chicks just developing their mature feathers and in hens during the new growth of feathers after the molt. The new quills just coming through the skin attract the fowls and they pick at them and in time pull them out. Being juicy, and perhaps not bad to the fowls' taste, the hens soon seek more. This plucking out of feathers, if long continued, makes raw surfaces which lead the hens to eat each other, which is cannibalism.

Free range at time of growing new feathers will do a great deal in the way of prevention. Where this is not possible, extra effort should be made to keep the fowls busy. All grain should be fed in very deep litter and it will be found best to scatter the morning grain in the litter the night before after the fowls have gone to roost, so the flock will have no time to stand around early in the morning. Green food in the form of cabbage or mangles hung by a string will also help to keep the flock busy.

If a wet or dry mash is fed, oil meal should be added in the proportion of one pound to ten of the other meals, to encourage quick growth of the new feathers and thus remove the temptation. Any fowl that shows signs of having had feathers pulled out or skin torn, should have special attention. Anointing the affected parts with an ointment made by thoroughly mixing a teaspoonful of extract of aloes with a cup of lard, will prove effective in keeping other fowls from picking at the torn parts. The males, as well as the hens, must be watched for feather pulling.

Cannibalism frequently results from continued feather pulling, although not in all cases. A scab or sore will sometimes cause other fowls to pick at the unfortunate one, bringing blood, which attracts still more attention. This is particularly so in flocks of closely confined young chicks. Males with torn ear lobes or wattles, due to fighting, are also a means of introducing the habit. Fowls torn in fights or with sore surfaces of skin, should be removed from the flock. Pure creolin should be applied to the sore surfaces (paint the sore with the matter). It is best not to return the fowl to the flock until the scab is gone. The feeding of raw meat will make fowls bloodthirsty. Raw meat is a good feed, but it should not be fed too frequently, and when fed should be finely ground and mixed with the mash. Prepared beef scrap is the safest meat food for

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Prosperity; indicated by substantial buildings, fine fowls—and healthy children

Jack Brown—Some Farmer

WESLEY RAY

"THIS is Mr. Brown?" said I, reaching my hand to shake with a clear-cut, matter-of-fact son of the soil. "Jack Brown," he corrected. "Just plain Jack Brown, if you please," and I was pleased with the welcome which showed in his honest brown eyes. I had traveled through three counties to get to see and talk with this man, because I had heard much of his farming methods. I had ofttimes inquired of his neighbors about Mr. Brown and they were unanimous in voting that Jack Brown was some farmer! What a lovely site for a farm home, thought I as I looked about. The residence, modest, though neat in appearance, stands well back from the picturesque little river known as the Tiger. Just back of the house, on the sloping hillside, a fine orchard stretches away in even rows, and I could see the fine apples, red and golden, on the trees, for it was early October and the winter fruit was ripening. In the pasture fields above I noticed fat cattle feeding contentedly on the luxuriant blue grass, and dotted over the place I saw many fine chickens. The evening shadows were gathering in the little valley. I was drinking in the matchless beauty of the green hills, against the blue of the southern sky a small cloud, high and solitary, catches the pearl-pink signal of a glorious sunset and reflects the beauty of it in the peaceful farm scenes. Supper was awaiting us and I was introduced to Mrs. Brown, a fine farm lady of the true southern type. No wonder that Brown had made a success with his mountain farm; how could he help it with such a woman for a partner? And the supper—well, it was fit for a king, and I did ample justice to the good things spread upon the board.

Mr. Brown told me many interesting things about his farming experiences, and when we retired for the night I was glad that I had made this pilgrimage.

Next day I went over the farm and noted carefully his fields, barns, and stock and his methods of doing things. His farm consists of 260 acres, mostly hill land; about 65 acres of this is still in virgin forest and has fine timber on it; about 100 acres is in permanent blue grass pasture. Fifty acres is devoted to meadow, timothy, orchard grass, clovers, and alfalfa. The remaining 50 acres is devoted to such crops as corn, rye, oats, sorghum, potatoes, etc. He does not grow any wheat, as he thinks this crop does not pay on his land.

He keeps about 12 grade cows, and most of the cream is shipped to the creamery and the separated milk is fed to his hogs, which are the large type Durocs, and beauties, too. While his barn is not a model for convenience, yet it compares favorably with the average barn of the good farmer. He is planning to build a very large and up-to-date barn, which will, I am sure, be a revelation to most of the farmers round about. This farmer lives eight miles from town, but he has been a good roads booster for several years and now there is a fine hard road leading by his place to town. It is said that he put a thousand dollars into this road, and if he did it was money well invested, for now he has a large farm truck which practically puts him within a mile of town, as compared with the former mud road. I especially like his rotation plan for his crops. He banks upon the old stand-by, red clover. This he generally sows with his spring oats the latter part of March. The following year he cuts the first crop for hay; the second crop he plows under, after the seed is ripe, and he seeds it down to rye. The following summer he takes the rye off and lets the clover grow up and fall down; he turns this

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NOVEMBER 15, 1920

"WHILE the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease."

It was just after the great flood, you remember, when Noah and his family alone were left on the earth and the building up of a new race was about to begin, that God made that promise; and as we come around to another harvest-home, another Thanksgiving Day, after a season of what we have been pleased to call unusual difficulties, we are reminded that He has again made good His promise and that the days and nights, the changing seasons, the heat and the cold, the rain and the sunshine have again carried us from seedtime to harvest; that our barns are full; that nature's time of rest and recuperation is here, and that, when this period is ended, seedtime will unfailingly come around again, and, in spite of all seeming barriers and difficulties, the same process of production will be repeated—as He promised.

"This is the Lord's doing; it is marvelous in our eyes!"

And haven't we *all* a lot to be thankful for this year? No—you don't think so? You think *some people* have a lot to be thankful for, but as for you—well, you've had a lot of trouble and loss and sorrow and affliction, and it isn't in your heart to thank God for these things? What's the matter, friend—don't you believe with Paul (Romans 8:28) that *"all things work together for good to them that love God?"* Or is it that *you* don't love Him and you won't *let* these "all things" work together for your good, as He intended them to? You and I will never understand the true meaning of life until we can see everything that comes to us as a part of God's wise plan for us and be content to leave Him to work them all together—the things we are inclined to call misfortunes, as well as the things that seem fortunate—into the ultimate good, which is His will for those who love Him. We must learn to say with the Psalmist, "I know, O, Lord, that thy judgments are right, and that Thou *in faithfulness hast afflicted* me."

Let's give thanks, then, this Thanksgiving Day for *all* that God has given us this past year, and in our gratitude let's resolve that during the coming year we'll stop worrying and "leave it all with God." Let's take to ourselves Paul's advice to the Philippians (Ch. 4:6, 7): "In nothing be anxious; but in everything by prayer and supplication *with thanksgiving* let your requests be made known unto God. And the peace of God, which passeth all understanding, *shall* guard your hearts and your thoughts in Christ Jesus." (American Standard Version.)

No one needs this freedom from worry, this peace that passes all understanding, this spirit of thanksgiving more than the American farmer in a time when farming continually presents new problems and perplexities. These are things that go to make a *practical* farmer— and therefore they are fit subjects for discussion in these pages.

EDWARD T. WALKER.

Why Not a Yearly Apple Week?

THE record breaking apple crop in Pennsylvania—probably 7,000,000 barrels or more, as against 2,700,000 last year and a 5-year average of 4,700,000—led to the appointment of the first week of this month as "Apple Week."

It also leads to the question why not do this every year? True, we may not always have bumper crops to dispose of, but it is an exceptionally lean year when there is not such a supply of the sorts which keep for only a limited period as to cause much waste. It has been demonstrated repeatedly that the consumption of any food product can be greatly increased by concentrated effort. If this is so with oranges, raisins, nuts, dairy products, etc., why not with home grown apples? We say *home grown* because it is a readily observed fact that aggressive selling methods cause western apples to bring an extravagantly high retail price in our markets, largely on the strength of appearance, while our own fruit, sometimes not as large or highly colored, but of far better quality and flavor and with no cross continent freight charges or fancy packing to pay for often goes begging.

It takes time, of course, for any movement to gather momentum, but with each succeeding year the results would become more apparent. The markets and groceries could confidently stock up in anticipation of the demand of their customers who form the habit of laying in a supply at that time. The customers themselves learn to eat apples more freely and the housewife discovers new ways in which they can be used. This more intimate acquaintance with the earlier sorts creates a stronger demand for the varieties which will be brought out of storage later.

The old adage, "An apple a day keeps the doctor away," gives the idea that the apple is a health regulator or food accessory rather than a food itself. No one will dispute the good effect that its acids have on the whole system, but the apple has a food value, quite capable of standing on its own merits—in fact, in nutritive value apples closely resemble green vegetables.

When Columbus discovered America apples were growing here. They were the small wild woody kind to be sure, but apples were cultivated here as early as 1629, when some were imported for this purpose by the Governor of Massachusetts. Nowhere else are apples more at home than in the United States, and in no part of our country do they thrive better than right here.

The Measures the Grange Approved

THE Second Annual Report of the Washington representative submitted to the annual session of the National Grange at Boston, mentions the following measures approved by the Grange which have during the past year been acted on favorably by Congress or other authority.

The broad general statements on Americanism and orderly government and against nationalism, adopted at Grand Rapids, have been accepted by Congress as the policy of the government. The railroads have been returned to their owners, legislation has been passed for a privately owned merchant marine, and no government ownership measures seriously considered. The declaration favoring leasing of public lands has been included in a law, wholesale land settlement schemes failed to receive support. Universal military training was defeated and strict prohibition enforcement laws were enacted. Equal suffrage has been approved by the necessary two-thirds of the states and is now in force. Both political parties promised the appointment of a farmer as Secretary of Agriculture, and agricultural representation on government boards and commissions as demanded.

All of these matters have been acted on in a way which must please the Grange and for which, undoubtedly, much of the credit must go to that body.

The report then goes on to mention matters which were approved by the Grange, and were urged on Congress but on which satisfactory action is still pending. One of these is "Further economy, efficiency and retrenchment in government, so the war debt may be paid."

Wherever the blame lies, it is only too evident that "further economy" is necessary if the United States Shipping Board is still squandering a round million dollars a day of the public funds. This is stated to be true by authorities associated with the compilation of a congressional report just issued. According to these authorities wild extravagances, inefficiency and political "pull" are responsible for losses hardly believable. In the item of ship repairs alone it is estimated that $65,000,000 a year is being thrown away. Yes, it is only too true that there is need for "further economy." The Grange is right.

Incidentally, wouldn't some of these millions come in pretty handy to the farmers who have been trying to get money to hold their crops for better prices?

Bulletin Helps for Farmers

If you use cotton duck about the farm, there is a lot of valuable information for you as to the best kind to buy and how to increase its serviceability in Farmers' Bulletin No. 1157, entitled "Waterproofing and Mildew-proofing of Cotton Duck."

"Culling for Eggs and Market" (Bulletin No. 1112) has been written briefly and in simple terms for the beginner and especially for members of the Boys' and Girls' Clubs. It shows clearly with picture and plain description how to pick out the good layers in a flock.

"Brood Coops and Appliances" (No. 1107) is another bulletin written mainly for the boys and girls. Poultry club members are successful only when they give their birds good care.

"Hawkweed or Paintbrushes" (Department Circular No. 130) and "Poison Ivy and Poison Sumac and Their Eradication" (Bulletin No. 1166) offer valuable help to farmers who are bothered with these weeds and want to get rid of them.

Anyone who has read with interest Prof. Grantham's article on crimson clover, starting on the front page of this issue, should be interested in "Growing Crimson Clover" (Bulletin No. 1142) which has recently been issued. It goes over the whole subject in a practical way and in considerable detail.

The enormous apple crop this year makes the appearance of Farmers' Bulletin No. 1160, "Diseases of Apples in Storage," very timely. Storage diseases cause heavy losses each year, much of which is entirely unnecessary and can be prevented by proper methods of packing and handling, together with suitable conditions of ventilation and temperature.

The prevailing type of each breed and the ideal toward which the breeders are striving are described in "Breeds of Dairy Cattle," Bulletin No. 893, a revision of an earlier issue. There is a lot of useful information here for the man who is selecting a breed for any dairy enterprise.

"The Beef Calf—Its Growth and Development" (No. 1135), deals with fundamentals and aims to help particularly young farmers and members of boys' and girls' clubs in selecting calves for development.

Any of above farmers' bulletins may be obtained free from the Division of Publication, Department of Agriculture, Washington, D. C.

Just a Fence—Yet a Great Gulf Between Them

R. B. RUSHING.

Viewing the two farms from a standpoint of location there is only a fence between John Jones and Tom Smith. But, viewing it in another way, there is a great gulf between them.

John's farm is just the sort that makes a good picture for a back-to-the-land article. There's paint on the house and barns and sleek coats on the live stock. His income leaves a tidy little sum above the expenses and he always has time to go visiting, to all the fairs, farmers' meetings and other public places, read the papers, including several farm journals, put up a bird house in the busy season, and build rabbit traps for the boys in winter, or add another touch to the cozy neatness of his farm home.

Things are different with Tom. He works—well, believe me, friends, he does work some. From the first gray suspicion of day until the last light has faded—and then usually a while later—Tom is still busy. Why, the proverbial bee is a loafing idler compared with Tom. And yet his work doesn't seem to count much. He is always behind with his plowing and reaping. His crops are always late and usually some of his crops get frosted. You have seen such. He has manure waiting to haul out, and various other things waiting to haul in. There are loose boards on the barn, his house needs repairs and the apple trees back of the house haven't been pruned for several years.

Yes, they both started in about even and not very much difference in their age. Both went in debt for their farms, but every day made a wider difference between them. John was boss of his situation from the start, and seemed to regulate it to suit himself. Tom just sweated and slaved and rushed from one thing to another, bossed by his situation. Now there's a good stiff bank account on one side of the fence, and a good stiff mortgage on the other. Yes, Tom believes that farming is a half-paid drudgery. John believes Tom's farming is drudgery, too, but he hasn't any reason to believe it of his own. Tom often wonders why he hasn't succeeded like John. He has worked hard and economized—he is even too economical to subscribe for any farm papers, or to take a day off to go to the county fair to see what other farmers are doing. John takes a dozen of the best farm journals, several newspapers, and goes to fairs, institutes and every other thing that is liable to better his conditions. It's queer, anyway, to Tom.

The two men are very good friends and often stop to have a friendly talk. John isn't stuck up, and Tom isn't envious. Both of them are men, clean as the rain washed air about them. Only one has succeeded and the other—may. The conversation that turned the tide of Tom's affairs happened one day when the summer was at her best. John "whoaed up" his fine Percherons and riding cultivator, got off the seat and walked over to the fence with the independent stride of a man who won out on a good thing. Tom stopped a listless, non-breed, and leaving his walking cultivator, went across to meet him, his face troubled and his steps weak.

"How you comin', John?"

"Fine! How's Tom?"

"Just tolerable."

They talked of the weather, the crop outlook, the price of eggs and cream and of farming in general. The conversation led up to the question Tom wanted to ask, so naturally that asking it was easy.

"John," he said, "how is it that you get along so well with your work and I'm always a week or two behind? You do your business in spare times with checks on the bank and I have to do mine in time stolen from my work with promissory notes."

John snapped a sliver from the fence and picked his teeth with the careful air of a man who is going to make no mistakes. Then he took his hat off, carefully scratching his head, and put his hat back again. In all his life John has never neglected that formality when he had anything very important to say.

"Well, I'll tell you, Tom," he said. "There's only one way I'd try to answer that question, and that's by giving you my ideas of farming. If that explains anything, all right. If it don't—well, maybe there isn't so much difference as you think.

"You see, this is my view of the thing. I look at my acres just as if they were so many hired men. The taxes, cost of working, harvesting and all that are the wages. The crops they produce is their work. My problem is to make 'em earn their money. Well, a hired man has to be well fed and well treated. He has to have good tools. You don't want anybody or anything to waste his time. And I've found that a change of work sort of freshens him up and puts him in proper spirit to do better work. Regarding an acre of ground as a hired man, the same thing holds true in a general way. The acre has to be fed with clover, alfalfa or manure. The seed is the tool it works for you with, and that wants to be good. You can't expect any more of the acre with poor seed than you can of the hired man with a broken down cultivator. Then you don't want the acre to waste any time growing weeds. With a change of work once in a while it will grow better crops. So I provide the change by rotating crops."

Tom was thinking deeply, and when John stopped for a moment, he said: "I see your point, John, but if we all start growing bigger crops, prices will soon come down and we'll just be draining our land and handling more bulk for the same amount of money."

John kind'er grinned.

"Well, you just asked for my way, Tom, and I've given it to you. You needn't be afraid of hauling down prices with the extra bushels you can grow, and everybody won't go in for increased production. As a matter of fact, it's in the off years when average farming fails that better methods count. They'll get you a bigger crop and there's mighty little danger of overproduction. And we get a lot of off years, Tom."

Tom admitted that "we" did.

"As a fact," John continued, "this overproduction theory reminds me of something my little girl said last night. She wanted to go up-stairs and I told her she couldn't. She kept on wanting to go and asking why I wouldn't let her, and finally I told her there was a bugaboo in the stairway that would get her. She looked at me in a wondering way and asked, 'Papa, what is a bugaboo? I'd like to see one. I'm not afraid.'"

Tom laughed. "Maybe," he said, "the little girl was right. Maybe this overproduction is a bugaboo."

"If it isn't," John said, "maybe it would be good medicine. If we got half prices for big crops a few times we might take the notion into our heads of setting prices on our own goods."

John turned around, to see his team starting off with the cultivator across the rows. "Whoa, there, Dollie! Whoa, Nell!" he demanded. The well trained mares stopped. John started off.

"Well, I have to get busy," he said. "That south wind is licking up the moisture to beat the cars, and I've got to stop as much of it as I can today. We'll talk this thing over again some other day. Making money on the farm depends on a lot of things, and maybe by putting our heads together we can get at some we've both been missing. I don't know it all yet, I'm sure. So long, Tom."

"So long, John."

Illinois.

Buying from Held-over Stocks

SMITH C. MC GREGOR.

Most country hardware and implement dealers find left-over items when the harvest season is past. Such items only mean tying up money for another year, and most dealers are glad to sell them at a reasonable profit.

No farmer can afford to be without spare parts for the implements he depends on to work with. The delay in the busy season, when it often takes weeks to obtain a replacement, usually costs more than the part itself.

By anticipating future needs and snapping up the bargains, many farmers save a nice sum. It is more than an accident, the success of those farmers who prefer to look ahead for opportunities, instead of looking at past mistakes, though that is profitable—if it prevents similar ones in the future.

New York.

Successful Co-Operation with Plant in Dubois, Pa.

In view of the attention and thought which are being focussed on co-operative produce and milk marketing, the successful experience of the dairymen in Dubois, Pa., in conducting a co-operative milk distributing plant with the assistance of the Dairy Division of the United States Department of Agriculture, is interesting.

As the owners are primarily producers and unfamiliar with the business of milk distribution, the Dairy Division keeps in touch with the work being done, and advises the stockholders in regard to the management of the business. Similar assistance is given to other organizations, whether co-operatively or privately owned, whenever requested. The price which the farmers get for their product is determined by dividing the net receipts from sale of milk, after deduction for operating expenses and sinking fund, among the farmers in proportion to the amount and quality of milk they have respectively brought to the plant. Starting in July, 1917, with a business of only 800 quarts, they are now handling over 2000 quarts daily, and have been paying remarkably good prices to the members. The enhanced profits were not the result of high charges to consumers, but of economies brought about by co-operation, such as reducing the number of delivery wagons. The co-operation of producers in one concern has also enabled them better to handle the problems of surplus and shortage of milk. The supply has been kept adequate to the demand; and at the same time the quality has been more uniformly satisfactory than formerly.

Since last February the price allowed for any particular milk has been based on its butter-fat content. All milk is expected to have at least 3.25 per cent. of fat, and for this milk the minimum price is paid. For every one-tenth of 1 per cent. of fat above 3.25 there is an additional allowance of 4 cents per hundredweight.

Topdressing Helps to Grow Good Pastures

To keep pastures in good condition the application of acid phosphate and ground limestone is recommended by soil fertility specialists at the Ohio Experiment Station.

Where farmers have fields difficult to plow, it is possible to stimulate the growth of blue grass and clover by an application of acid phosphate and limestone. The use of these materials has proven beneficial on the experiment farm in Meigs county.

Grass seed applied early in February or March helps to establish a permanent pasture, but acid phosphate may be spread over the land in the fall at the rate of 200 to 300 pounds per acre every two years.

Ground limestone may be used every 4 to 6 years at the rate of two tons per acre.

Uncle Sam World Leader

Uncle Sam has become the world's greatest captain of industry, so says Managing Director W. I. Drummond of the International Farm Congress. Here are the figures, the facts:

The United States has 6 per cent. of the world's population.

We own 7 per cent. of the world's land.

We grow 25 per cent. of the world's wheat.

We produce 33 per cent. of the world's silver.

We mine 40 per cent. of iron and steel, and 20 per cent. of the world's gold.

We operate 40 per cent. of the world's railroads.

We dig 52 per cent. of all coal used in the world.

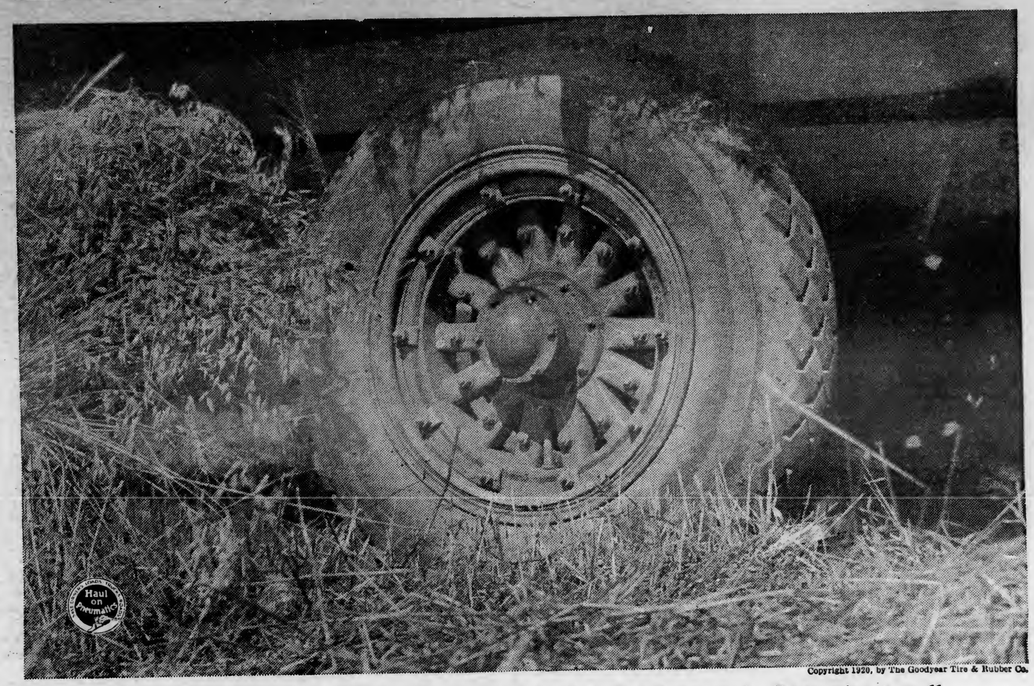
We raise 60 per cent. of all cotton of the world.

We produce 66 per cent. of the world's oil.

We produce 70 per cent. of the world's copper.

We manufacture 85 per cent. of all motor cars.

Placing shoes on shoe trees when not in use will put off a trip to the shoe dealer's several months.



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"The big Goodyear Cord Tires make a motor truck a real farm tool. I use mine to pull a hay cutter, or a rake, or an automatic loader, as well as to haul grain to the threshing machine and then to the barns for storage. The pneumatics roll through our peat bogs, 14 feet deep in places, which we use for fuel supply; teams can't go into them after rains, pneumatics can. I haul pure-bred Holstein stock to St. Paul, 80 miles, without appreciable shrinkage. Others take days to do the harvesting I do in hours—because of my truck on pneumatics."—E. H. Kuchenbecker, Owner, Oakcraft Grain and Dairy Farm, Owatonna, Minn., R. F. D. No. 1

THROUGHOUT agricultural America today there is many a farmer who can make a report similar to the one given above, regarding the all-round utility and value of a truck on Goodyear Cord Tires.

Just as the application of motor power quickens plowing, pumping, spraying, grinding and other farm operations, so does truck power aided by the active pneumatics quicken farm work in a large variety of ways.

All those tons of produce, stock and supplies that otherwise require such tedious toil in handling and hauling, are rapidly loaded and whisked between farm and town on the big, smooth-going Goodyear Cord Tires.

Farm products formerly limited to selling points only a few miles away, now have ready access by means of trucks on Goodyear Cord Tires, to markets sometimes 50 to 100 miles distant.

In the most strenuous of such duty these pneumatics demonstrate the rugged strength of their Goodyear Cord construction which makes possible that exceptional reliability with which they serve.

Farmers' reports of savings and advantages obtained with pneumatic-tired trucks and other motorized equipment, will be mailed on request by The Goodyear Tire & Rubber Company, from Akron, Ohio, or Los Angeles, California.

GOODYEAR

CORD TIRES

Some Points on Growing Crimson Clover

(Concluded from page 325)

Crimson clover is sown at the rate of 15 to 20 pounds per acre. In Delaware 75 per cent. of the growers use 15 pounds of seed per acre. Since there are about 135,000 seeds in a pound, the rate of 15 pounds per acre allows about 45 seeds per square foot. This is an ample quantity, as one thrifty clover plant will often occupy one-half a square foot. The tendency of the plant is to send up a large number of stalks from a single seed. More than 75 stalks have been counted from a single plant.

Seedings of crimson clover are made by hand with a grass seeder. A portable seeder is necessary in standing corn. A favorite seeder with the Delaware farmer is the Cahoon type. Sometimes the seeding is made from horseback in order to get a greater range of distribution. A slightly larger quantity of seed is necessary when sown in corn, as some of the seeds find lodgment in the stalks. In the open any ordinary hand or power seeder may be used.

Crimson clover is rarely sown with a nurse crop. Occasionally the clover is sown with buckwheat and the latter harvested in the usual manner. The clover develops well under these conditions and soon covers the land after the buckwheat is removed. Another combination quite largely used in Delaware is the mixture of wheat and crimson clover, sown early in the fall and cut the following spring for hay. Two or three pecks of wheat are used to 15 pounds of clover per acre.

Crimson clover is like other legumes, in that it is the host for certain nitrogen gathering bacteria which live on the roots of the plant and develop nodules or tubercles. Thus, on a soil where crimson clover has not been grown it is well to inoculate the seed before sowing. Delaware growers pay little attention to inoculation, as the soils of this section seem to be pretty thoroughly infested by the desirable bacteria. The inoculating material for treating the seed may be secured from the Department of Agriculture at Washington or from commercial dealers.

There are several uses other than soil improvement to which crimson clover may be applied. The hay made from crimson clover has been found to be of excellent feeding quality. In fact, many Delaware farmers prefer it to red clover hay. As a result of inquiry among more than 100 growers as to the feeding value of crimson clover hay as compared with red clover and cowpea hay, 80 per cent. considered crimson clover equal to, or better than, red clover or cowpea hay. The above expressions of opinion seem very well borne out by the analyses given below.

COMPOSITION OF VARIOUS HAYS.

Pounds per ton

	Crude Protein	Digestible Protein	Crude Ash
Red clover hay	254	147	142
Crimson clover hay	310	214	162
Cowpea hay	310	210	182
Alfalfa hay	320	237	156
Bran	320	246	120
Timothy hay	126	60	82

These figures show that crimson clover hay has more digestible protein than red clover and about the same as cowpeas. Alfalfa hay and wheat bran are not much superior to crimson clover, either in total crude protein or in digestible protein. Crimson clover hay is relished by all kinds of stock and is considered by Delaware farmers as an excellent feed for work horses. Those who have used it for dairy animals claim splendid results. The fact that crimson clover can be grown in a shorter time than red clover and can be made at least a month earlier in the season, and on soil not well adapted to red clover, is of great importance in those sections of the country where forage is difficult to secure. While alfalfa is a desirable crop to grow, nevertheless that crop requires much more attention in the way of fertilizers and other soil amendments than does crimson clover.

The following statements concerning the feeding value of crimson clover hay are from farmers who have grown the crop for a number of years:

"I prefer crimson clover hay to either cowpea or red clover hay, all cured equally well."

"Crimson clover hay is much better than either cowpea or red clover hay. I prefer it to timothy, even for driving horses."

"If crimson clover is cut at the right time it makes a feed superior to cowpea hay or red clover hay."

"I find crimson clover a richer feed than red clover."

Care should be taken to cut the clover for hay just as the plant is in full bloom or before much of the spike has turned brown. If the clover is allowed to stand until the seeds are formed the hay may cause digestive troubles in stock due to the chaff of the clover heads becoming stiff and wiry. If cut at the proper stage of maturity no harmful results follow. In reply to an inquiry along this line only 3 out of 124 farmers had ever experienced any injury from feeding crimson clover hay.

The average yield of crimson clover hay as reported by Delaware farmers is two tons per acre. The hay is held in such esteem that there is always a sharp local demand at good prices.

For certain times in the year, late fall and early spring, crimson clover furnishes a valuable pasturage. While crimson clover cannot take the place of red clover during the summer season, yet it can be made to supplement red clover or ordinary pasture by supplying early pasture. Crimson clover cannot be expected to serve as a permanent pasture, as growth ceases when the blossoms appear. Where the crop is to be plowed down for soil improvement pasturing is especially desirable, as it is better to turn under a moderate rather than a heavy coat of green manure. Unlike some other legumes, crimson clover will produce seed wherever the plant thrives. There is only one cutting, which is the seed crop. For this reason the seed can generally be grown locally for home use. The clover is allowed to stand until the heads are brown before cutting. The seeds shatter out very freely when the heads are dry, consequently the crop should be cut in the morning when the plants are tough. Some growers cut at night to prevent shattering. The crop may be handled by a mower with a bunching attachment, which leaves the clover in piles or cut with an ordinary mower and raked into windrows. The clover should be handled as little as possible before delivering to the thresher. The seed is easily hulled and the ordinary clover huller does the work satisfactorily. For local use the seed is sometimes flailed from the hay and sown while retained in the hull.

Seed grown on soil of medium to low fertility will generally produce more or better seed than when grown on rich soil. A fair amount of phosphoric acid and potash should be provided when seed is desired. Pasturing clover moderately in the early spring does not seem to materially lessen the yield of seed. Rather thin seeding is better than a heavy stand.

That there is money in growing seed is evident from the average yield and price as reported by farmers. The average yield, as stated by 41 growers, is 7½ bushels per acre, with an average farm price of $6 per bushel. The seed crop from the above figures will return about $50 per acre, and the land produces a crop of corn the same season. Eighty per cent. of the seed growers claim that they can mature a crop of corn following a seed crop of clover. Thus the total returns from an acre in a year would be about doubled.

The principal difficulties in the growing of seed, as stated by farmers, are lack of hulling machines at the proper threshing time, the uncertain weather, and the tendency of the seed to sprout and shatter. Seventy-five per cent. of the growers state that clover seed growing is profitable under ordinary conditions. The prospects for better prices are encouraging, owing to the wider introduction of the plant, and its use for purposes and in localities where seed production is not practicable. Crimson clover seed may be obtained from the eastern seed houses at from $8 to $10 per bushel. If your local dealer does not keep crimson clover seed in stock he can get it for you through eastern seed firms.

The lack of vitality in crimson clover seed may be due to the seed being harvested too early, to heating, to molding before threshing, or to age. When the seed is fresh it is of a bright reddish yellow color and has a high polish. The color changes to a rusty brown with age, and becomes dull and lustreless. Seed of dull appearance should be carefully examined and tested for germination before sowing. A good grade of seed should germinate 85 to 95 per cent. Seed over a year old is likely to deteriorate rather rapidly. Crimson clover is not commonly adulterated; at any rate, it may be identified by the color and by its almost oval shape, which will allow it to roll easily from a smooth surface.

Protect Your Roses

"Protect your roses," is the recommendation of Prof. A. C. Hottes of the Ohio State University. "All of the hybrid teas, teas, and most of the hybrid perpetuals need winter protection. The best protection is gained by hilling the earth about the base of the plants to a height of 8 to 12 inches. A common cause of injury in the winter comes from allowing water to remain about the crowns of the plants. After soil is drawn about the plants, the surface should be mulched with several inches of coarse strawy manure, which will not only serve as a protection against the cold, but will conserve the moisture in the plants and add to the fertility of the soil. Late in February and in March the strong sun causes the branches to become warm and start their growth. At night the air again becomes cold. Such alternate freezing and thawing is very injurious to the rose plants. To guard against this injury, the branches should be wrapped with burlap, straw or evergreen boughs.

"The hybrid teas and teas should be entirely covered with soil or protected in some way to a height of 12 to 15 inches. Many rose lovers turn orange boxes or peach baskets over the plants after they have been hilled up and mulched. Climbers are also well protected if their tops can be placed on the soil and covered with earth. Many of the hardiest sorts need no protection."

Jack Brown—Some Farmer

(Concluded from page 326)

deeply in December and January and this he cultivates in corn. He says in this way he averages 60 bushels of corn to the acre, and the beauty of it is, his land is growing more productive all the time. He always plants his potatoes in clover sod and he makes a success in growing them.

Farmer Brown has gained quite a reputation for his method of selecting seed corn and he has a very prolific variety of white and yellow which he is constantly experimenting upon and improving. He gave me a new angle in selecting seed corn. He hunts for ears which maintain size almost to the tips. That is, he showed me the difference in ears that kept their size with full, plump grains running to the tip of the cob, from those which tapered down to small, uneven grains at the tip. I had never given this phase much thought before, but he says this is the secret of his fine corn.

Farmer Brown keeps from 75 to 150 head of cattle on pasturage, and he raises all their feed. His motto is, "Have the best," and he certainly is living up to this. He selects his own seed oats, rye, sorghum, and, in fact, all seeds which he plants are selected by him from crops grown on the farm.

He has a repair shop where he and his two fine sons spend the rainy days blacksmithing and repairing machinery. The greatest lesson that this true story points, is in the fact that fifteen years ago Mr. Brown purchased this farm from a man who declared that the reason he sold it was because he could not make a living from it. He paid $2000 for this farm and today $20,000 would not buy it. He is not only making a good living, but his farm is improving each year; he is educating his boys and at the same time laying up a substantial bank account. And remember, he is miles away from a market in the hills of eastern Kentucky.

I want to add, while I think of it, that Farmer Brown keeps a carefully penned set of books, and he knows just to a frazzle, as he puts it, where he stands in his farming business. Jack Brown is a fine example of what a citizen should be. He is thoroughly progressive, and above all, he and his family are really and truly Christians.

West Virginia.

Business Sense in Crop Rotation

WM. J. WATTS.

There was a time when a farmer grew a home supply of nearly everything and then sold the surplus, but today his needs require a more commercialized occupation. He craves an automobile, good clothing, variety of food from the stores, and recreations that are gotten with money, hence the development of a keener business sense. There is no longer so much hesitation about planting cash crops if they can be substituted instead of part of the old rotation of grass, corn, oats and wheat. Or if prices and markets make any crop in the old series unprofitable there is a chance to try something else. Different conditions, both for growing and selling in different localities and on different farms, make this a problem to be solved for each particular case. The study of markets alone is a wide and interesting one and more complicated than our city brother's stock exchange quotations. To forecast the possible price of farm produce is naturally the chief object, but even with the most careful study, weather conditions, etc., interfere and upset all calculations after some growing seasons. However, there are definite characteristics about some markets that give us the tip. Nearly everyone knows of cases where farmers gave special attention to a special line or side crop and did well, but too often such experiences are not made the rule instead of exceptions. A very good instance can be found among the mining towns of central Pennsylvania, where a large part of the garden and fruit products are brought from other regions while local farms are used for grain and stock. Tomatoes sold in those towns this year for $4 per bushel while they were scarcely worth gathering in some gardening sections. Poor transportation was largely the cause of the great range in price, but observation has shown that farmers near industrial towns can nearly always grow the cash crops and pocket the money otherwise paid for freight or express. Fresh vegetables and fruit just out of the field is always preferable. Before motor trucks were invented it was common to drive twenty miles on my father's wagon and then within a mile of the market pass fields of grain. There is where I wished my father's gardens and orchards might have been, for a wagon seat is not intended for long distances. My father made more money that way than by grain farming, but how inconsistent that the nearer farmers did not take his market. The same condition exists today, only a motor truck makes the long trips. The inability to see market possibilities arises from the same mental deficiency that furnished the theme for Dr. Conwell's famous lecture, "Acres of Diamonds," in which he tells how to find them at everyone's doorstep. Every farmer has an interesting problem in adapting crops to markets. *Pennsylvania.*

Uncle Ab says: I always try to keep my work in front of me; when it gets behind and begins to push me, it gets me worried.

Scraps of soap melted in boiling water make a good soft soap for cleaning purposes.

Home-made Fertilizer Distributor

CHAS. A. UMOSELLE.

A tool which I have used considerably is a home-made fertilizer distributor, consisting of a good sized hopper, mounted on a frame similar to a wheelbarrow frame with straight handles and a home-made wooden wheel about 2 feet in diameter. Hopper should be made smaller at bottom than at top, and with a strip cut out of bottom about half an inch wide and the length of the longer side of bottom. A piece of wood is made to fit in this opening so it will slide and close it entirely, or leave an opening to let the fertilizer escape as fast as desired. A little practice will show how far it should be opened to sow the desired amount. Of course, this is for using fertilizer in the drill. By its use I have been able to drop 200 pounds in 20 minutes when fertilizing heavily. The fertilizer I use is dry and fine enough so it runs quite freely without an agitator, but if necessary one might be easily arranged by placing a crank on the end of the axle and connecting this with some sort of crank arrangement in the bottom of the hopper that would stir the fertilizer a little and break up any little lumps that might clog the opening. If desired the opening may be made a little to one side of the middle, and by going twice in a row the fertilizer is left in two lines a short distance apart, which insures a more accurate distribution and a better mixing with the soil. Then I mix the fertilizer more thoroughly by dragging a bag with a few stones in the bottom along the drill or by running the furrower through again. I like this latter method better, as it insures a better mixing and gives a little extra tillage.

New Jersey.

Will Keep Main State Roads Clear of Snow This Winter

For two or three months each winter the northern state highways have been made impassable, or nearly so, by drifted snow, and the hundreds of millions of dollars invested in them bring no return to the taxpayers during the time the roads cannot be used. With a view to remedying this condition, the Bureau of Public Roads of the United States Department of Agriculture has been making this summer a study of the situation with regard to snow removal in the states east of the Mississippi and north of the Potomac. An engineer of the bureau has conferred with the highway commissioners in the states in this territory, and reports that definite plans have been made in New Jersey, Pennsylvania, Michigan, Indiana and Illinois which will result in the main trunk lines being kept open all winter. In some other states, notably in Ohio, snow removal is the duty of the counties, and while the state highway department is prepared to assist the counties in every way and is urging the necessity of the work, it is not empowered to initiate the work.

In some of the states snow fences will be placed for the winter 50 feet from the highway, to stop the snow before it reaches the road. These "fences," which are made of slats, are tipped backward until they form a decided angle, and then are braced like billboards. In the spring the sections are unbolted from the stakes and stored by the state highway commissioner until winter. This type of fence has been used by many railroads in the past during the months of snow and has proved very effective as a snow guard to the roadbed.

In other localities snow plows, either horse or motor drawn, will keep the state highways clear. One of the most efficient type of highway snow plow has a broad blade, which removes the snow, attached to the front of a motor truck. A second truck chained to the first pulls while the first pushes the blade.

The Blast Did the Work

On the farm of John Sparks near Warsaw, New York, was a well drilled in rock to a depth of 185 feet. It was cased with 6-inch iron piping. The flow of water was not constant and was not sufficient for the farm needs. County Agricultural Agent T. W. Vann was appealed to to suggest a remedy. He recommended a well blast.

When drilling the well the driller had found a "spring strata" at a depth of 150 feet, so it was decided to place the charge of dynamite at that point in the hope that the shot would open up the veins in the vicinity and sufficiently augment the water supply. Eight cartridges (four pounds of dynamite were tied together into a compact bundle of a shape that would go inside the well casing. A 12-pound weight was attached to the under side of the bundle to pull it down into place. A cord 150 feet long was used to lower it to the desired point. The upper end of the cord was tied to a stick about a foot long, laid at right angles to the top of the casing, holding it in place. The well was full of water up to within 12 inches of the top. The charge was set off by means of a blasting cap and length of fuse attached to one of the cartridges. The fuse had to be lighted before the charge was lowered into place. For the sake of safety, the fuse was cut 18 feet long. Fuse burns at an average rate of a foot per thirty seconds.

The weight was tied under the charge rather than above it, because had it been above, it would have been shot up into the air and might have damaged something when falling. The farm house was but 16 feet from the top of the well. The shot was entirely successful in increasing the flow of water from the well.

World War Memorials

In France a law requires that no memorials of the great war shall be erected until ten years shall have expired. This law will enable France to recover and to strengthen its economic condition before engaging in the building of memorials.

In the United States, memorials are gaining headway daily. Monuments, memorial halls or buildings, and other structures are being built or planned. Memorial parks are being given favorable consideration. Madison, Wis., is completing plans for such a park.

While sizeable cities and towns are building memorial parks, the small town and village will find this plan one of the most feasible. The small towns usually lack parks. In the park the trees may bear tablets bearing the names of the honored dead.

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Trapping on the Old Farm

ARTHUR H. HOWELL.

As the season of the year is here for trapping most fur-bearing animals, perhaps a few ideas from one who has followed trapping may be of interest, as well as some value to our readers. I am not going to undertake to give any new ideas or information to those who are already expert trappers. This is intended for the benefit of farm boys and young men just starting into the trapping business, as most boys and young men like to do trapping in late fall and early winter, merely to pass away the time and for the sport attached to it, if not for the profit, as fur brings in quite a good bunch of spending change. For the past few years there has been good money made in trapping, as prices for all kinds of pelts have been exceedingly high. They will no doubt be considerably lower this winter, but at that you will be paid for the time spent.

The first of November is soon enough to begin trapping, and one should quit about March 10th at the latest. The pelts are best in January, February; also the last half of December. The most valuable fur-bearing animals found in this part of the country are the fox, skunk, mink, raccoon, opossum and muskrat. Mink are found along streams, where they search for crawfish, minnows, frogs and birds for their food. He is a sharp rascal and usually very hard to capture. The trap must be a good No. 1½ or No. 2 and tied so he can't possibly get away with it. Dens along creek banks and runway are good places to set. Cover the trap lightly with leaves. Be very careful not to put on too coarse trash, nor too much, but just enough to hide the trap well, as too much on the trap will interfere with its action.

Muskrats are very numerous in some places along creeks and ponds, and I think are among the easiest animals to catch. They always have good, slick paths leading from their dens and you have plenty of good places to make the set. I find it best to set the trap just under the water where he comes out, so when he is caught he will nearly always drown himself.

The raccoon and opossum are caught along our bluffs and in hollow trees, and if you use good judgment they are very easily caught.

The fox is our hardest animal to catch and when one does catch a fox he should be a proud trapper. Old trappers know a fox will nearly always show marked interest in anything that looks like the remains of an old camp fire. Usually, too, he will dig around in the ashes to see if there is anything for him to eat, therefore when out trapping foxes it is a good plan to make beds of ashes. On these beds place small pieces of scrap meat, being careful not to touch the meat with bare hands, for the fox is scared at anything that has human scent on it. Bait the ashes several times and allow the fox to visit it unharmed. Then set your trap, carefully covering it with loose ashes. Then burn a little grass over the trap to make the place look natural. Be sure to have a good trap and tie it to something that will give, so he can't break loose and get away. Then put bait on ashes for him. It is best to use leather gloves all the time when trapping foxes.

The skunk is very easily caught, as he goes into anything in search of food. You can catch them in dens and paths most anywhere. In making a den set, place the trap just inside the den and cover lightly with leaves or dry grass, and if Mr. Skunk comes along, nine times out of ten he is caught. I use an animal bait for all the various kinds of animals. It can be bought at the various fur houses. Take good care of skins and stretch them natural size and keep flies away from them. Keep in a cool, dark place and you will be repaid for your labor. *Tennessee.*

Bad Habits of the Hen

(Concluded from page 326)

fowls. The writer has had a number of experiences in feeding raw beef to young chicks and has found that unless it is used in moderation, cannibalism will result. Once a week is often enough to feed raw beef, and even then it should be mixed with mash.

Toe pecking, as its name implies, consists in the chicks picking at each others toes, in time bringing blood. This habit is peculiar to small chicks. Punching the web of the chick's foot in marking the chicks after they are over a week old, bringing blood, which attracts the chick's attention, is a frequent cause. This punching should be done when the chicks are a day old, so that it will be healed by the time the chicks begin to notice things. The young chicks will not notice such things during the first week, and besides, when the punching of the web of the foot is done early, practically no blood results. The marking, when done at one day old, will never disappear. Cutting off the end of one or more toenails, another form of marking, will also often cause cannibalism. This is a crude and cruel method that should not be practiced.

Many claim that toe pecking, feather pulling and cannibalism are due to a lack of meat food in the ration. The writer's experience has been that the opposite is usually the case. However, we must remember that the prime cause is idleness, for idle chicks or hens will be the ones to find time for experiments leading to the bad habits discussed. *Pennsylvania.*

Turning Shells Into Crops

Along the famous Chemin des Dames, France, the damage to the soil from the bursting of high explosives was so great that it now costs the French Government from 15,000 to 20,000 francs per acre to restore land which before the war was worth about 2000 francs. Yet France is steadily going about the work of reclaiming the highly-explosive soil of her devastated area.

In a given area about Soissons, taken as a typical example, 150,000 acres of farm land, pitted from end to end with shell craters, sown thick with shell fragments and unexploded projectiles, traversed and retraversed with a labyrinthine mass of trenches and woven oven with an inextricable mesh of wire entanglements, awaited reclamation in November, 1918. By March 30th, 1920, the French Service of Public Works, assisted by the natives of the region, had cleared of barbed wire, 4,000,000 square yards of surface and had filled in 3,500,000 cubic yards of trenches and shell craters, rendering the land ready for the plow in time to sow the 1920 crops.

In the entire Department of the Aisne 23,000,000 square yards of surface have now been cleared of barbed wire, and 17,000,000 cubic yards of trenches and shell holes have been filled to date.

The termination of hostilities found over a hundred thousand tons of non-exploded projectiles buried in the soil about Soissons, a constant menace to the farmers. To gather these up, transport them to specially prepared "exploding grounds," bury them under three yards of packed earth and explode them by electric contact, was a formidable task. Artillery specialists were put in charge of the work and after fifteen months of dogged searching for buried shells 65,229 tons had been unearthed and exploded. Today the work is more than three-fourths completed, and by the end of the year it is believed that not a shell will be left in the fields of Soissons. Over 100,000 acres of the 150,000 comprised in the "Soissons area" are now entirely free of this menace.

No sooner has the Service of Public Works prepared a region for the resumption of farming than a new government reconstruction agent steps in to hasten the economic regeneration of the devastated zone. This new agent is known as the Motorculture Service.

The Motorculture Service agents in the Department of the Aisne established last spring in the Soissons district alone twenty-five "farm parks," operating 50 steam tractors, 35 5-share steam plows and 25 harrows. Of 85 such "farm parks" to be established throughout the province, 75 are already in operation. Their agricultural specialists, operating modern labor-saving machinery of American type, plowed and harrowed for the spring planting season 50,000 acres of reclaimed land, which was turned over, ready for sowing, to the owners of the ground.

In order to assure an abundant crop the French Government placed at the disposal of the returned owners this year, on credit, at a purely nominal price, over a million pounds of seed grain and 500 tons of fertilizer. This past summer, in the Aisne Department, where war's hand fell most heavily, 320,000 acres of farm land out of 900,000 under cultivation, waved under the ripening stalks of yellow grain.

One of France's greatest allies in her peace-time labor of reconstruction has been the American Red Cross. During the last twenty painful months of reconstruction it has brought help to the inhabitants of more than 4000 ruined towns and villages. Relief supply warehouses were established at Verdun, Mezieres, Chalons, Rheims, Laon, Lille and Ameins. Branch supply depots were scattered through the war zone at smaller centers of population and relief and medical personnel rushed to the scene.

In addition to hundreds of tons of commodities consigned direct from America, or purchased in the open market in France, ten million dollars' worth of American Army stocks were made available for distribution to the needy. In all, the expenditures involved in this Red Cross relief program, totalled more than 250,000,000 francs.

Although the need for the assistance of the American Red Cross has now practically disappeared, a wide field of activity among the school children of the devastated zone still remains, and in this field the Junior Red Cross of America is extending its operations. Its efforts will center upon providing schooling for the children there until the school system of the region has been reorganized and the destroyed school houses rebuilt or replaced temporarily with barracks.

Meat Scrap for Egg Production

That rations for laying hens should contain approximately 12 per cent. of meat scrap for efficient egg production is brought out by tests at the Ohio Experiment Station.

This amount of meat scrap has decreased the cost of feed more than 20 per cent. and increased the egg production more than 50 per cent. as compared with a ration containing only 2 per cent. of meat scrap. This was true of both the heavy and light breeds of poultry.

A ration in which the grain mixture was made up of three parts corn, one part wheat and the dry mash mixture of two parts, by weight, ground corn, one part bran and two parts meat scrap, has proven satisfactory. The fowls consumed twice as much grain as mash.

May Restore Chestnut Orchards

Chestnut orchards which have been practically annihilated by a blight of Japanese origin, may be restored through efforts of the United States Department of Agriculture. Ten years' experimentation has shown that it is possible to cross the chinquapin, a dwarf chestnut, with the Japanese chestnut, which is blight resistant, and that the hybrid trees thus produced are quite resistant to the disease and yield nuts of good flavor and quality.

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Underdraining and Subsoiling

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1305, DEC. 15.—Co-operative marketing: What has been accomplished in your section recently in co-operative marketing, in either a large or small way? This is a much discussed subject and we want to hear of the successes and failures in big and little experiments along this line, that we may profit by, and make progress from the experiences of one another.

TOPIC No. 1306, JAN. 1.—What is the most important thing you learned about farming this past year and how are you going to "do it differently" in 1921? We all make mistkes or guess wrong once in a while, but it's the wise man who profits from his experience.

W. H. B., Flora Dale, Pa.—My first experience in underdraining was in the slough lands in Illinois in the late sixties. It was the work of a simple machine called a mole ditcher, which consisted of a long beam through which passed a steel coulter with a round point. The depth was regulated by levers on the beam. A ball a little larger than the point was linked to it, and impacted the soil, and a spud on the lower part of the ball made a little cut in the bottom of the drain. These drains were effective for years, but the crawfish made frequent repair necessary. In the eighties, in Iowa, the machine tile layers began to take the place of the spade in ditching. In neither of these states did we need to use a pick, as there were no rocks. The tile ditchers, of which the "Swamp Angel" and "Monarch" are examples, opened the ditch, laid the tiles and closed the ditch, all at one operation.

Ponds, and in places where no bank afforded an outlet, a hole was bored down to the quicksand which underlies the prairies, and these were used as outlets. These low lands, there as here, were of the finest, and as the soil was deep, a drain drew a long way. Millions of acres of slough lands, through drainage, now help to feed the world.

Coming back to the East in the eighties, one of the first problems that came up was the treatment of a wet meadow. With a spade and pick we opened up a ditch about 100 rods long, beginning above the buildings and running down the meadow to a brook. Eventually many laterals and branches were connected with this, tapping a wet weather spring here, another there, a branch through the garden, another to the basement, connecting with the tank in the milk room, another running through the back stabling to the ice house, and so on. This work was done, off and on, and no estimate of cost can be made. We now thought we were through, but when one begins to ditch there seems to be no end to it. So, late in the fall of 1913, finding an orchard that was just coming into bearing complaining of wet feet, there was nothing to do but to drain it. With a "Cyclone" ditcher we ran out something over a mile of ditch in about 12 hours, using three horses abreast on each side of the ditch. It worked as a great plow, throwing the earth to each side, and taking a number of trips to each run of ditch. We put a ditch between each row of trees. We had been assured that the apple roots would not close the drains, as elderberry and locust do. The soil is red clay, and there was picking to do. The tiles, 3-inch for all but the main, cost $14 a thousand at the kilns. Before the tiles were all placed wet weather set in and winter came, and the finish in the spring was a nasty, rubber-boot job. We never had a tile close, because we did not put tar paper over the joints, as many still do. When we put in our first tiles in red clay, some tiles had been secured in place by tramping some earth on them, and a shower coming, the water laid in the ditch for days. So we have learned two important lessons—put surface, not subsoil, in the bottom of the ditch, and plow the ditches shut as soon as possible after opening.

The bit of tile work that gave me the most satisfaction, and of which I am proudest, was done in a piece of road that never omitted an opportunity of being a mudhole. We dug a 30-inch drain and filled with creek gravel on top of the 3-inch tiles, and that has been the driest part of the road for 15 years.

We dynamited holes for about 300 apple trees, but have not determined whether it was of much advantage, as we had no checks for comparison.

W. R., Carbondale, W. Va.—The subject of underdrainage has always been an important one with me. Years ago, before this method had begun to be practiced in our part of the country, I reclaimed a bit of swampy land by tile drainage, making it a valuable asset to my farming business. This bit of land adjoined my place and I purchased it for one dollar per acre. I cleared the brush from it and ran a tile ditch through the center to a creek, at the expense, counting the lateral ditches, of $15 per acre. (The largest expense those days was the tiling.) Today this land is worth $300 an acre.

I have had some experience in dynamiting the subsoil. It is a fine thing where the subsoil is stubborn. I had a bit of land that could be plowed to a depth of only 8 inches. It was not much account for anything, as crops burned out in dry weather. I went over this piece of land, putting a stick of 40 per cent. dynamite in the ground to a depth of 18 inches, and every 8 feet each way. Result: This land now produces fine crops and is very drought resisting.

Mrs. E. M. A., Ashville, N. Y.—When I took possession of my little home my garden was a hopelessly weedy wilderness, one corner of which was so swampy it wouldn't even raise thrifty thistles. I had two lines of tile run lengthwise across it and over the weediest spot I set an asparagus bed, because I knew I could salt that heavily enough to kill the weeds, and I didn't know of any other way to dispose of such a varied collection. Next to the asparagus I set everbearing strawberries, but the first season it rained all summer and one spot proved still swampy. I had a tile lateral added and had no further trouble. Over one row of tile we raised pop corn 7 feet high and almost overloaded with ears, though that spot had refused to raise anything but weeds before. That was six years ago, and, with the aid of an unlimited amount of cultivation, hoeing and weeding, I have raised a number of crops of vegetables on that garden since; some years I have had prize weeds, too. This fall I am teaching, and the garden receives no care whatever, but if I ever want to raise "truck" again I have a well drained location, though I think I shall have it seeded for the present; a rest won't hurt it, and the tiles will be highly beneficial to the seeding.

C. C. C., Jr., Penn Laird, Va.—Our soil is mostly of a gravelly nature, underlaid with a stiff subsoil. In planting fruit trees many years ago we did some experimenting with dynamite by blasting the holes. In a few years a marked difference could easily be detected in our trees in favor of those set in blasted holes. We were now pretty well convinced that our stiff clay subsoil was making us no little trouble all over the farm in various crops and decided to do some experimenting in an effort to break up this hardpan or subsoil. About this time a great deal was being said about the value of the subsoil plow as a cheap and economical means of breaking up stubborn subsoil. We fell for the theory and purchased a subsoiling plow, brought it home and put it in a field of 12 acres behind a breaking plow. We were then plowing for corn early in spring. Finding the subsoil plow difficult to pull at a depth of about 8 inches, the depth we desired, we placed three good horses to it and did a good job, subsoiling the entire field save a slight border around the outer edge. We looked in vain for results, not only first season, which was a rather wet one, but every season thereafter. Never being able to detect any difference in growing crops in this field on part subsoiled, we later dug down with a shovel, cleaned soil carefully away and examined the subsoil. Contrary to the theory advanced those days, we found the subsoil as firmly united as ever. In short, the subsoil plow proved a dismal failure, as it has done in other instances here. We next tried deeper plowing, going slightly deeper each year until we reached a depth of from 10 to 12 inches. Mingling this subsoil with soil by degrees gave us excellent results and we gave up our plans of next trying out dynamite, which we have since used freely for blasting holes for fruit trees with the same gratifying success. Were we to do any underground draining today other than deeper plowing, we would use dynamite. We find increasing soil depth, that is, mixing subsoil with soil a little at a time, has pretty much the same effect as breaking this hardpan and is much cheaper.

W. H. H., Prince George, Va.—Where necessary, one of the first objects to be considered in the way of improving and maintaining soil fertility is proper drainage, as it is impossible for us to grow the regular farm crops on wet, soggy land. One of the best and cheapest methods of underdrainage I know of, for short, low, wet spots, is accomplished by what we call "blind ditching." First cut the ditch directly through the center of the wet spot about 3½ feet deep and about 2 feet wide, then fill in a little over half way with poles or small logs and then lay on top of poles a wide board and fill in with earth level and solidly. Such a ditch will draw the standing water from the wet spot every time a heavy rain comes, thus keeping the land in good tillage shape at all times. Again, by this method no land will be wasted, as you can cultivate right over the ditch. I have had such ditches last four to eight years, giving good results. While, of course, tile drainage is best where one has considerable wet land, yet I am simply stating the above economical method for those having small wet places to contend with, as I know this to be practical.

Make Your Own Sauer Kraut

With plenty of cabbage, and prices low, it is a good plan for housewives to convert some of it into a supply of sauer kraut for home consumption, according to Miss Pearl MacDonald, professor of home economics extension in the Pennsylvania State College School of agriculture. An ordinary measuring cup full of salt is sufficient to use in making five gallons of kraut, which is ordinarily a sufficient supply for the average family.

Solid heads of cabbage should be cut fine. Put about a 2-inch layer in a 5-gallon crock and sprinkle a little of the salt over it. Take a wooden potato stamper, or similar pounder, and pound the cabbage until it is somewhat juicy. Add successive layers of cabbage with sprinklings of salt and pound until the crock is filled to within two or three inches of the top. Put a plate over the top, weight it down with a clean stone, cover with a cloth to keep out the dust and set in warm place until it ferments. The fermentation will take several days. When fermentation is complete put a piece of cheesecloth, slightly larger than the surface of the cabbage, directly over the top of the kraut, and replace the plate and stone. There should be enough liquid to cover the plate. If a scum appears it does not mean that the liquid should be discarded. When removing kraut, turn back the cloth and prevent the scum from coming in contact with the kraut. Always keep the plate and stone on.

It is time that we begin to take the back track. Instead of destroying our forests we must restore them. Fortunately nature will help generously if given a fair chance.

Whatever else the winter may kill, the insect pest will emerge next spring serenely smiling with all the old-time pep. Cleaning up the garden of old vines and weeds discourages him.

Store squash and pumpkins in a dry, warm place not far from the furnace in the cellar or near the chimney in the attic.

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WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

DECEMBER 15.—Several years ago at this season we discussed Christmas candies and goodies, but sugar wasn't such a luxury then as it is now. Let's discuss them again, but with a view to economy, with as little loss of "joy" as possible, under present conditions. Give recipes fully but concisely.

JANUARY 1.—What "get-together," community welfare or social events are going on in your neighborhood this winter—especially those which you think other sections could take up to advantage? Social recreation of the right kind, with perhaps a little "mental improvement" thrown in, is a mighty important thing. If there are no socials, entertainments, fairs, bazaars, plays, lectures, concerts, etc., planned, what do you think would do your community the most good?

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Revive the Old-time Thanksgiving

Mrs. O. J., Rio, La.—Thanksgiving is strictly American. Its object, "lest we forget." Therefore the day is not perfect if the feast be made from the modern dishes, or served in the fashion of any other country but our own. Ribbons, laces and hot-house plants are all out of order. Use ears of corn, heads of grain, berries, autumn leaves and ferns for decorations. Fruit arranged in an Indian basket or half of a pumpkin, makes a nice center piece. Turkey is not a necessity; a fat hen, tender rabbit, baked ham or sparerib is less expensive and fully as appropriate. Last year we had a Thanksgiving festival at our church. In honor of the occasion all the old china, antique silver and curious bits of pewter, rich in reminiscences of the past, were permitted to do duty. Dinner was spread on the plain boards, lighted with candles, and consisted of such viands as our Puritan foremothers could have served. A kid was barbecued; roast turkey, ham, rabbit, chicken, corn bread, hominy, baked squash, potatoes, onions, celery, cheese, cider, pumpkin, apple and sweet potato pie, pickles and fruits were brought in baskets. Each invalid, aged and shut-in person of the community was sent a dainty dinner on a tray, with a Thanksgiving card, by a boy, dressed as an Indian, who presented it with a genial "How." After dinner the young folks repaired to a nearby barn, also dressed for the occasion, and spent the evening in merrymaking. The majority of the youngsters were dressed as Indians and Puritans, which added charm to the occasion.

Mrs. J. B. B., Coudersport, Pa.—No American Thanksgiving Day is ever complete without the presence of children. The having them in the kitchen begging for just a taste and exclaiming over the size of the loaf cakes and number of pies gets one's heart tuned to the spirit of thankfulness as nothing else can do. Those people who can invite the members of their family to the third and fourth generation have no trouble in finding the true harvest home feeling. Praise God from whom all blessings flow.

But there are many homes in our land today which have been darkened by war and pestilence. Those who look in vain for loved ones will probably find more happiness away from the darkened fireside.

In a certain rural district the plan has been tried of having a neighborhood Thanksgiving, much after the custom of its founders. A central location is selected for the occasion. No invitations are issued. The people came or stayed away, as circumstances permittted, but it is needless to say that the house was always crowded with those who wanted to meet their friends in this way. Everyone contributed to the dinner and helped to get it ready for the table.

A harvest home dinner was planned to take place at our house one year. A large fat gobbler turkey was to furnish the principal dish. Two days before the feast he strayed from the premises and no amount of calling or search around the barnyard gave any clue to his whereabouts. An all day search finally located him in a piece of swampy woods only a short distance from the house. He never wandered more, but graced a bountifully laden table, where the story of his psychical premonition raised a laugh at his expense. Poor turkey. Perhaps the artistic setting of the dishes of golden squash, cranberry jelly, riced potatoes and creamed onions partly repaid the sacrifice. Pumpkin, apple and mince pies followed as second course, with ice cream at the last. The rooms were decorated with tall stalks of ripened corn, evergreen branches and autumn leaves. Dishes of bright colored apples and popped corn were distributed on small tables in the living room. The day came to a close, as all days do, and Thanksgiving Day was again a dream of the past.

Mrs. J. C., Ethridge, Tenn.—I am not so old but what I remember vividly the old-time Thanksgiving days spent at grandmother's; for this day was always spent at her house.

"Over the hills to grandma's
Now grandmother's cap I spy.
Hurrah, for the fun,
Is the pudding done?
Hurrah, for the pumpkin pie!"

The bounteous harvest was in full evidence in the glorious dinners she served. No stinting in Thanksgiving preparations. A large turkey, of course, stuffed, baked, flavored and gravied to perfection, pumpkin pies galore, fruit cakes of various and numerous ingredients, a bounteous supply of puddings, custards, jellies, sauces, pickles and relishes prepared from the season's abundance, and vegetables prepared in delicious ways with plenty of milk, butter and cheese.

Children and grown-ups were all served together, and this is a pleasant childhood memory; for we were, on some occasions, compelled to wait, eternally it seemed, while our elders were served to a five-course ceremonious affair, while we were positive we would starve before it ended. If tables were not sufficient at grandmother's our plates were piled high and we were allowed to eat away from the table. A hired girl was necessary at this time, so grandmother could join in the jollifications of the afternoon. Children played games and rollicked with grandfather as their coach and the women folks as spectators. Everyone joined in singing and conversation, and grandfather always provided a bounteous supply of nuts and apples for all to eat at their pleasure. A standing invitation to the whole family of relatives brought us together at least once a year for a reunion of rejoicing. And the atmosphere of the occasion, in an irresistible and unseen way, seemed to compel us to feel thankful and to give thanks for our many blessings.

It would not seem expedient to use space for the recipes used on these occasions; but good ones may be found in cook books and magazines, and why not, after the strenuous days of Hooverizing, indulge again in an old-time Thanksgiving of eatables and good cheer in abundance, and spend a heartfelt day of gratitude for what is ours, be it little or much? And by participating in so sumptuous a repast we need not of necessity have visitations of "hob goblins" and "man eaters," etc. For there are those now, as there were then, who would rejoice over a basketfull of good eats such as grandmother used to pack for the less fortunate ones of the vicinity.

Mrs. M. F. S., Georgetown, Del.—Thanksgiving day, with us, has always been a day which we thought it a duty, as well as a pleasure, to observe with thankful hearts to the great Father for His innumerable blessings through another year. He has bountifully supplied us, as a nation, with so many good things, and when we pause to think that He is the great provider, ought we not spend one day especially thanking Him for all these blessings, and sharing our pleasures with our dear friends? I remember, over seventy years ago, going with my married sister to a big Thanksgiving dinner, and oh, what a fine time all had. Spare-rib baked, oysters, fried cakes, cheese, bread, butter, preserves, pickles, etc. The turkey and cranberry did not seem, in those days, to be in evidence as in later years. But good cheer, merry hearts and a happy time were ours. And as the years have sped along we have observed the day with our near friends. The reunion of the families brightens us up and affords us many pleasant remembrances. It is so sweet to recall the faces of our dear friends who have met with us on Thanksgiving Day, and who now are with the giver of all we receive on Thanksgiving Day and all the days one lives here. They have passed to the great beyond, while we are left to help and cheer all we can. Our Heavenly Father has another year given us much to thank Him for, so let us celebrate it with our dear friends as far as possible, with all the good things to please the appetite we can afford, not forgetting to send cheer to someone less fortunate. The birthday of our blessed Savior and His resurrection day stand high above all other days we celebrate, and Thanksgiving Day next, so good cheer and happiness to all our readers.

Mrs. E. M. A., Ashville, N. Y.—Verily, these are not days in which the majority of people are stressing their thankfulness for material benefits overmuch; but a good many of us do feel especially glad on the last Thursday in November that we are no worse off than we are. I know of no better way of keeping alive the original significance of the day than by teaching it faithfully to the children and, as both a rural teacher and a rural mother, that is exactly what I am trying to do at present, and by the time the day arrives this year I hope to have the idea fairly well impressed upon my school and my daughter. Children are usually interested in historical sketches and the excellent blackboard stencils now on the market help very materially in fixing essential facts in their minds. These, with a judicious amount of reading aloud from interesting and appropriate stories should, and undoubtedly will, go far toward molding the right sentiment and thus insuring the correct observation of the day in the homes these children will some time establish, whether or not it is observed as it should be in the homes of today—and sometimes it is.

Miss M. T. M., Mitchells, Va.—While we aim to thank our Creator every day for the many blessings He has bestowed on us during the past year, we have always observed the great national Thanksgiving holiday. As it arrives just at the season of the year when the crops have been harvested and home made ready for winter, I aim to plan ahead for this day, so I can serve a typical Thanksgiving dinner and attend church services also. Our dinner does not seem complete unless a turkey graces our table on this festival. With this we have a celery, chestnut or oyster dressing, mashed potatoes, candied sweet potatoes, spinach, turnips, sliced tomatoes, a salad, pickles, bread, nuts, coffee; sweet potato and pumpkin pie are our favorite desserts for this day. The pumpkin and sweet potatoes are put through a sieve, seasoned and then placed in a covered dish, the pie dough is made the day before, also, thus on Thanksgiving morning we simply add the eggs and milk and the pies are made in a short time. On Thanksgiving morning the turkey is placed in the oven to cook directly after breakfast, thus we have time to put our house in order, set the table, etc., before leaving for church. After the bird is cooked thoroughly the pies are made and the vegetables are placed on the stove to cook. By having everything in place the day before, I usually serve a satisfying meal and have time for other pleasures also. My home is made as bright and as cheerful as possible for this holiday. Autumn leaves and chrysanthemums are used for decorations, and the pumpkin, apples and nuts grace the sideboard. Often we add to the joy of the day by inviting some friends to enjoy this feast with us.

Mrs. C. S. F., Louisville, Ky.—Thanksgiving Day used to mean what its name implies, but now it seems that from the way some people observe it, it means a day of pleasure seeking rather than one of thanksgiving. It ought not to be so, for our fathers in sacred and humble devotion gave to us that day apart from all others in the year, as the one specially selected in which to return to our Heavenly Father heartfelt thanks for His many blessings to us throughout the year.

For our Thanksgiving this year we shall invite about half a dozen relatives as our guests, and they, together with our family, will sit down to such a dinner as my time and strength and our means will admit of. The turkey may be a chicken, the cranberry sauce may be made of apple, but just the same we shall try to act and live so that a spirit of thankfulness shall prevail. I shall try to let common sense guide me, and instead of treating our guests to over-preparedness and utter exhaustion, we shall make them welcome and show them true hospitality. We shall be thankful that we are able to do so, and at the same time render unto God thanks for the mercies of the year, and if our guests cannot enjoy the day in the same way with us, we shall feel that they and not we have failed in observing it.

Our Fashions and Patterns

Full directions for making, as well as the quantity of material required, accompany each pattern. Patterns are perfect-fitting and seam allowing. When ordering write your name and address in full, state the number and size of each pattern you want, and send **15 cents** for each.

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9651.—Ladies' dress. Cut in sizes 36 to 42 inches bust measure.
8813.—Ladies' house dress. Cut in sizes 36 to 44 inches bust measure.
9533.—Boys' suit. Cut in sizes 2, 4 and 6 years.
9774.—Girls' dress. Cut in sizes 4 to 14 years.
9768.—Girls' and child's coat. Cut in sizes 2 to 12 years.

Our Latest Fashion Book

Owing to the number of departments in THE PRACTICAL FARMER, we are unable to illustrate as many patterns as we would like; therefore, we publish each month a 32-page fashion magazine called The Fashion World, which is edited new from cover to cover each month, illustrates all the new styles and contains a serial story, hints on dressmaking, etc. This interesting little magazine costs 5 cents a copy when ordered alone, but we will send you a copy for 3 cents if you order it at the same time as you order a pattern. Send 18 cents for one pattern and a copy of the fashion book, or if you want to be kept in touch with all the new styles as they come out each month, we will enter your name for a one year subscription for our monthly fashion magazine for 35 cents. Address

FASHION DEPARTMENT,
THE PRACTICAL FARMER,
PHILADELPHIA, PA.

Choosing the Paint and Paper

"I know that the house needs repairing but how am I to do it this year?" is the question every woman asks.

Redecorating the house with well-selected paints and wall papers will frequently prove to be the best method of removing the down-at-the-heel appearance of your house.

The wall paper and paint need not be costly. Many of the new papers in good designs and colors are inexpensive. The colors and patterns which will harmonize best with the furnishings of the rooms should be chosen. Perhaps color is of first importance; harmonious color will cover a multitude of sins in design, while no amount of good design will atone for discordant color.

For the small, dark rooms choose light colors, for they will bring in more light, say the home workers at the New York state college of agriculture. Plain papers or small patterns will make the small room seem larger. A covering of soft, creamy yellow brings the appearance of sunshine in that north room, whereas a gray or gray-blue will make it cold and cheerless. Rooms on the south in general need cool and dark colors to temper the light. Rooms that are comfortably lighted and sufficiently sunny are open to a variety of color treatments.

Strong or bright colors are not appropriate for use in large masses, such as wall or floor coverings. Strong colors may be used in small masses, such as may be found in flowers, books or textiles, to add a note of interest, or to accent a color scheme.

The various tones of brown, tan and buff, and also the grays, have been found satisfactory for wall coverings. They do not soon become tiresome, and they make the walls serve their purpose as a background for people, furniture and activities that take place in the room.

Asters Add Beauty to Fall Garden

As the commonest flower of the fall, cultivated in the gardens and growing wild in the fields and fence rows, the aster is now much in the eyes of those who care for flowers. The garden aster, however, is a different plant from the native New England aster, and comes originally from China.

The aster is one of the easiest plants to raise, and blooms at a season when most of the flowers are gone. Those who begin to plan next year's garden now are likely to be interested in the new publication on China asters which has just been issued by the New York State College of Agriculture at Ithaca. It will be sent free to those who ask for F 152. Some gardeners have overlooked the possibilities in the sale of aster blooms. On this subject the bulletin says:

It is a common sight to see first-class asters so carelessly bunched that the flowers have no sale, while poorer flowers attractively bunched and tied sell readily. If the flowers go to a commission house, the buyers, of course, are professional florists. These men can see at a glance whether a bunch has been arranged and tied by one who understands how flowers should be prepared for market. He wants the bunch so made that each flower can be seen, and that the stems will be of even length. A bunch of asters, twenty-six blooms, should have all the leaves stripped off the lower three inches of the stems, and should be tied securely about two inches from the ends of the stems. The flowers should be cut when nearly open, and placed in water during the day or over night before shipping. In bunching, the flowers should be graded and placed in the same bunch with flowers of the same age or quality, and with those of equal length of stem, and the like.

Making Clothes Last Longer

If you are waiting for prices to drop before you buy new clothes here are some ways to prolong the life of the old, suggested by Miss Hazel Manning of the department of home economics of the University of Wisconsin.

Use a cotton protector over woolen dresses when they are hung in the closet. The dust which would otherwise fall on the dress is caught by the protector.

Hang woolen garments in the air and brush them frequently. If they are hung out-of-doors in a light snow or wind and then brushed much of the dust which has settled in the fabric will be removed.

Spots or stains should be removed immediately. An old stain may combine with the fiber so that it cannot be removed without injury to the garment.

Unwashable dresses should be made over washable linings.

Mend badly worn places in garments at once before they become too big.

Shoes require as careful attention as do clothes. The best way to make them last longer is to use the stretcher or shoe tree when the shoes are not on the feet. As soon as the shoe is removed from the foot the stretcher should be put on before the dampness has evaporated and the wrinkles are set. Brushing is also good for shoes. An old stocking sprinkled with oil and rolled to allow the oil to penetrate, will make a good shoe cloth. By using this the shoe leather is not only polished, but preserved as well.

Maple Syrup from Corncobs

MRS. C. A. UMOSELLE.

Everyone knows the value of maple syrup, and the opinion of many is that nothing in the form of molasses has such a delicate flavor. Hot cakes with maple molasses is a dish good enough for the best of us, but owing to the fact that the timber is being cut and used for various purposes, the supply of this syrup has been reduced, while the demand is steadily on the increase. Hickory bark and all sorts of adulterations are used to help increase the supply and to deceive the public, but maple syrup has been difficult to imitate. The best imitation yet produced is by the use of corn cobs. The product is really so good there is no need to use it as a substitute, as it can find a place on the table on its own merits.

Any cook or housewife can easily satisfy the entire household of the merits of corncob molasses. The process is simple. Secure a dozen or more clean cobs, remove the ends, break the remainder in two or three pieces and wash in cold water, and then place in a quart or more of water and boil for half an hour. Strain the water and use it, and add granulated sugar to it as for making ordinary sugar molasses. It will take an expert to distinguish the flavor from maple syrup.

New Jersey.

Homespun Yarn from Ithaca

A stitch in time saves more than nine if it is taken when the first rip appears in a glove.

Hanging sheets and tablecloths with the ends over the clothes line keeps the hems from whipping loose in the wind.

Tea, chocolate and cocoa stains are removed by soaking in cold borax water.

Oilcloth doilies with good designs in stencil have the two-fold advantage of cleanliness and good looks.

Plain cheesecloth dyed to harmonize with the room, and left unironed, is a good substitute for high-priced curtain materials.

It's a saving of fuel, when cooking certain foods, to prepare enough to use for two meals. It need not be served in the same fashion each time.

A pot of parsley in a sunny kitchen window furnishes joy to eye and palate all winter.

A pair of scissors, purchased especially for the kitchen and hung on a convenient hook above the table or sink, will save many steps to the work basket.

One housewife puts all soap scraps in a small flannel bag and uses them up to the last drop of suds.

Two or three tablespoonfuls of preserved or ginger pears are a delicious addition to apple pie, one good cook discovered.

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A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER IV—Continued.

Mary had been told to ring for her breakfast when she wanted it, but the next morning Hannah reported that she had not done so, and had gone out very early without it. Marise knew that she must have run home to breakfast, and pictured the fiercely loving reunion with a heavy heart. "She'll fling herself down on me like a pup," Mrs. Healy had said; and Marise could not win so much as a willing touch of the young hand. The sense of being shut out desolated the whole day. She bought theatre tickets for the next week, but there was no pleasure in it, done like this—to keep Mary from being too painfully bored.

Mary's office closed at five on Saturday, but it was nearly seven when Marise let her in. She said nothing about where she had been, but her face was stormy, and her role of defiant cheerfulness was harder than ever to maintain. She escaped to her room as soon as possible, and when she came to dinner, it was evident she had been crying. Marise, confronting the tragic young presence, felt again the surge of impatience that had so shocked her the night before.

"It is Mary," she reminded herself. "It is my dear baby!" And so she forced the smile back to her eyes, the kindness to her voice.

"How was the office today?" she asked.

Mary would have risen from the dead to talk about the office, and she could not refuse the topic now. She began reluctantly, but the absorbing relations and experiences of that exciting world soon had her erect and glowing. Mr. Weeks had invented a new name for her. His private secretary, the one who was soon to be married, had blundered, and had been ignominiously sent home.

"Your head's too full of trousseau to be of any earthly use," he had vociferated. "For the love of heaven, go and buy lingerie. And send me the human gyroscope. Nineteen weddings couldn't make Mary Healy lose her balance."

"Of course, after that, I had to be Johnnie-on-the-spot if I died for it," Mary admitted, laughing. "Oh, it was a joke! I never worked so hard or fast in my life. And the better I did, the more old Weeksie pushed me—just for wickedness. When he was through, he said, solemn as an owl, 'You have done very well, and I will give you a day off tomorrow.' Gee, he almost caught me! I remembered just in time. So I says, 'You'r real kind, Mr. Weeks, but I'm pretty apt to have one on Sunday.' Laugh! I thought he'd blow up. 'Oh, go home, you gyroscope,' he says. It was funny.

Marise found response very difficult. Her child was magnificently equipped for self-protection, and yet the mother instinct cried out for the right to protect. She did not want her little girl to be at the mercy of unknown employers.

"Do you ever have any difficulties, Mary?" she asked with hesitation. "There must be all kinds of men in a big office. Are any of them ever—impertinent?"

Mary's shoulders squared, her chest swelled. "Not more than once!" she observed.

"But when you first began, dear—didn't the men sometimes make it hard?"

Mary had her philosophy on that subject and was glad to impart it. Mrs. Jaffrey, I've seen a lot of girls and fellows, and heard a lot of tales, but this is the way I dope it out: a girl gets what she's looking for, and she gets what she's afraid of; but if she isn't afraid, and she's straight goods, she hasn't anything to worry about. Of course, loafers say things to you on the streets: 'Come to the theater, girlie?'—you know, things like that. But all you have to do is act as if you hadn't heard. It doesn't even make me mad any more. Anyway, I never have any trouble." Mary hurried on, "and girls that are always talking about how they're followed and insulted—well, I think they kind of like the excitement. I know, there's a fearful homely girl in the office, and when one dark night she walked home and a fellow tried to join her—oh, she told it like a Horrible Experience, but she was just pleased to death. You needn't tell me! She's always walked home ever since. Oh, she's a nice girl," Mary added considerately. "She wouldn't do anything. But when a girl hasn't any fellows of her own, she can't help liking it when she gets some sign of life. It's natural."

Marise sighed, then laughed a little, looking at her child in humorous dismay. "You know too much, Mary!"

"Well, if you go down-town every day and keep your eye peeled, you're apt to;" Mary was gratified. "Gee, but it's interesting. Even when I marry I'm going on with my work."

"There is so much one doesn't understand;" Marise was thinking back a long way. "I used to go down to my father's office now and then—it was a big law office, and of course there were girls at the typewriters. I was so sorry for them that I was half ashamed to have them see me—I thought my lot was so much happier than theirs. And when I tried to talk to them, I felt shy. I was afraid they would resent my good times and my good clothes."

Mary's chin had taken a slight lift. "Mrs. Engel comes into the office all dolled up, but we don't envy her," she said with emphasis. "Sitting around an apartment all day—making calls—airing the Pekinese—there's nothing to it. I'm sorry for her."

Marise saw that she had made a mistake, and let her reminiscences carry her on to a safer place.

"It used to be a tremendous journey to my father's office," she said. "We didn't have any motors when I was a girl, and the carriage took hours. Probably I only went down when I wanted money, or some permission that had to be coaxed out of him; but I can see now how his face would light when I opened the door. He always had time for me. Ah, he was a dear person, Mary! I wish you could have known him."

Mary had been moving restlessly. "Yes. Well, the reason Mr. Weeks was so excited was that Miss Bowen—that's the secretary—had mixed two letters, put them in the wrong envelopes. Can you imagine a girl—" The tale flowed on and on. Marise's attention wandered. She had been saving things to tell Mary for sixteen years, but she had to face a depressing suspicion that Mary was not especially fond of listening.

"Perhaps one doesn't listen at eighteen," she thought excusingly, and turned to the girls she knew best—Evelyn and Doris Thayer, for instance. But she had to put away the thought of them in some haste. Their lovely courtesy, their well-bred openness to anything that "Aunt Marise," as they called her, wanted to tell them, made too sharply visible the price that Mary had paid for her independence. And Mary was splendid; that was all her mother needed to remember. She rose from the table newly fortified for her task.

"Do you sing, Mary?" she asked, pausing at the piano. Mary did not, and was apparently glad of it. "See if you don't remember this," Marise persisted, and sang an old lullaby that had often closed the little Mary's eyes. As she sang she could feel the growing weight of the child against her breast, and her voice, deep and sweet, plead with the closed young heart, begging to be taken in. Mary stood with bent head, turning over the books on the table. When Marise's hands dropped from the keys, she spoke roughly.

"No; I don't remember it at all. I haven't got much ear, anyway. I don't care for music." Then she lifted her head to listen, brightening with unmistakable relief. "Oh, there's the telephone—I guess it's for me. May I go?"

Marise nodded and she flew off. Presently she came back shining.

"My friend is down-stairs, Mrs. Jaffrey. He wants me to go out with him for a little while. Do you mind?"

No doubt it was natural. Marise forcibly put aside a bitterly hurt self. "Won't he come up and see you here?" she asked pleasantly.

"Oh, no." Mary was embarrassed. "I guess he'll take me to a show or something."

"Well, ask him to come up to get you, Mary." Then, as the girl hesitated, openly unwilling, Marise spoke with involuntary authority: "My dear, it is not fitting that you should meet him down-stairs!"

That was a fatal word to use to Mary, a fatal tone to take. She who was a little queen in her own world had not come there to be corrected and instructed! She flamed and stiffened, then turned without a word and marched back to the telephone. A moment later Marise heard her stalking up the stairs. Poor child—she had looked so like the baby Mary on the verge of an indignant uproar! For all her contrition, Marise laughed silently into her hands. She had a vision of a darkened room full of wrathful sound, with doll, elephant, lamb and pillow flying over the wall of the crib, when Mary did not feel herself in need of a nap. What a vigorous mite she had been, so loving and so full of fight! Marise, following her through days and scenes she had not dared remember for sixteen years, forgot to wonder why Mary's "friend" was so long in mounting and she in coming down. At last she lifted her head with a start. The apartment was uncannily still. Moving very quietly, Marise went up-stairs.

The door of Mary's room was open and she sat just within on a straight chair, her hands folded together, her eyes fixed on the wall. Grim patient endurance of an interminable ordeal was expressed in every line. "I suppose I can stick it out!" she seemed to be saying. The new novels had not been touched nor the work-box opened. Mary might unpack her bag, but she had steadfastly refused to unpack her spirit.

Marise stole down again, unheard, her lips set in a disciplinary line. Mrs. Healy's devotion had not been the unmitigated blessing that it had seemed! The girl was outrageously spoiled. Marise had for years been preparing her mind for dire failings in her recovered child, but this trial found her patience all unready. It was ridiculous for a girl to be so self-important! She could martyrize herself up there as long as she pleased; Marise did not intend to let her know that her pose had been witnessed. And so, on the second evening of Mary's return, mother and child sat separated, both in a high state of righteous protest.

CHAPTER V.

It is hard to maintain an attitude of proud ennui with no one to see it. Mary, sitting haughtily in her room while her mother sat quite as haughtily below, had at last yielded to a novel in an alluring paper wrapper when a step in the hall sent the book coasting under the valence of the bed. She had only just time to get back to her weary droop, chin sunk, hands lying heavily on her knees.

"Might I come in to prepare the room for the night, miss?" Hannah spoke over Mary's head with her most self-respecting expression.

Mary started at the voice. Then a clearing relief dawned in her eyes, her thumbs dropped into her belt and her spirit visibly welcomed the chance for a little healthy exercise.

"Do you open my bed to show me the way in?" she asked, tilting back against the wall. "Because, you know, it isn't necessary. Even in the woyking clarses we get in at the top."

Hannah, unhampered by Marise's presence, was no mean fighter herself. "The madam's orders," she said smoothly, folding the embroidered counterpane. "But if I am disturbing you, miss, I am sure the madam would be happy to have you sit in her room, or in the study if you are not wanted in the drawing-room."

A note of laughter acknowledged the thrust. "Go to it, Queen Victoria," Mary congratulated her. "I didn't know you had it in you. I begin to sort of like you."

"Indeed, miss?" said Hannah.

"Oh, you'll like me too, in time," Mary assured her. "I'm an acquired taste, like hot dog, but once you get it—you'll hate to see me go."

Hannah's face darkened. "I think Mrs. Jaffrey said you were to be here a few days?" she observed. "Or was it a week?"

"Oh, I'm going, all right. You needn't worry," Mary drawled. "Tell me, is it always as lively as this in the evenings? I'm almost dead of excitement."

That infuriated Hannah. "The madam is in society and is invited to all the best houses," she explained sharply. "When she stays at home in the evening, it is from choice. No doubt you are accustomed to phonographs and things of that nature."

"I sure am," said Mary, and yawned aloud. "How long have you held down this job?" she added.

"I have been in Mrs. Jaffrey's employ for seventeen years." Hannah, busy with the window-shades, did not see the girl's start.

"Then you were here before the—kidnapping, or whatever you call it?" Mary had brought down her chair legs and was staring with an intentness that Hannah considered low. Hannah had always defended the family tragedy from the excited enjoyment of the vulgar.

"I was, miss," she said coldly.

"And you knew the kid herself?"

"Certainly I knew Miss Mary."

"Gee!" It was a breath of wonder and despair at the amazingness of life. Mary struggled between caution and a surge of questions. "What sort of a youngster—?"

"Everything that a lady's child should be, beautiful and aristocratic." Hannah paused at the closet door. "The madam is kind to girls of every description, even the most common and loud, but she will never put any girl in Miss Mary's place," she explained with inescapable intention.

Mary had lost her fighting supremacy. The involuntary removal of her thumbs from her belt seemed to have left her vulnerable.

"Oh, won't she—pie-face!" she muttered.

"No, miss. Common ways and common language, they do not belong in the house of Mrs. Jaffrey. I have only pity for the ignorant. They know no better. They can't be expected to understand that a fine lady would be shocked by their ways." It was wonderful how Hannah's quiet hands, laying Mary's nightgown across the bed, could express her opinion of the garment. "Is there anything else I can do for you, miss?"

Mary's advantage was hopelessly gone. "You can let my things alone!" she burst out.

"I quite understand," said Hannah, and replaced in the closet a battered old pair of crocheted slippers that she had been about to set out. "Good night, miss. Breakfast will be served in the dining-room at nine o'clock—the madam's orders."

Mary glowered at her, but let her go unanswered. A new trouble had fallen on her burdened young soul. Her mouth still defied the world, but in her eyes lay a sick question. At last, hesitating, pulled forward and drawn back, she set out very slowly toward the stairs.

In the upper hall there was an arched opening, like an unglazed window, hung with curtains of pale yellow silk. One of these curtains had been brushed back, and, pausing there, Mary found herself looking down into the drawing-room over the railing of a little balcony that was fastened like a bird's nest half-way up the wall. Across the room, between the fire and a shaded lamp, sat her mother. A book lay under one hand, but her head had dropped back and her eyes were fixed before her. She looked very fine in her slender grace, very sheltered and cared for, but also she looked sweet and sad—and not at all as if she were harboring unkind terms, such as "common" and "loud." One's own mother—it was an upheaving thought.

If Marise could only have looked up! She would have seen her child wistful, humbled for the moment by an awful self-doubt, groping for help in the blind struggle between old and new feelings. She would simply have had to lift her arms. But the chance went by unknown, and when Marise, relenting, came to Mary's door to say good night, it was locked and the light was out.

Mary was herself again in the morning; perhaps a little more herself than was quite necessary. She came into the breakfast room with a generally squared look that was very nearly a swagger. Her mother put aside the morning paper and answered her high-handed greeting with a disconcerting smile. Marise had been impatient last night, but the miracle was too near, too amazing, to be lost sight of behind lesser feelings. Good or naughty, loving or defiant, Mary was her child, incredibly restored to her. Nothing else mattered. Beloved little Mary! Shining with tenderness, yet vowed to wisdom, Marise took her child's hand as she would have passed.

"Well?" she asked.

Mary had slept little and her nerves were on edge. "Well, what?" she returned, trying to make her roughness sound humorous, but not succeeding very well.

Marise let the hand escape. "How about church?" she asked pleasantly, ignoring the snub.

"We go sometimes;" Mary spoke with condescension. "We don't have to go, like Catholics. Mama's mother was a Catholic, but her father wasn't, and it made such an everlasting row and trouble that mama didn't grow up much of anything. But she calls on the saints when she gets excited. I laugh at her."

Hannah was not in the room, and Marise ventured an allusion. "If she and her sister had been Catholics, I might have found you years ago; for the priests would have known Mona Molloy's story as well as Mrs. Healy's. They keep close to their people."

Mary had her opinion of the Catholic Church, and expressed it with a definiteness and thoroughness that disposed of that venerable institution, at least as a topic. The facts she already possessed satisfied her, and she was not interested in speculative considerations. When she had successfully produced silence, she leaned back with an air of waiting for another subject, that she might decapitate it. She was beginning to enjoy herself, but her mother looked tired and remote.

"Girls are like that—I dare say I was," Marise was telling herself when there was a ring at the door-bell, a light-footed rush from the hall, and suddenly the room seemed to be full of girls, and flowers, and packages, and laughing cries of:

"Happy birthday! Happy birthday, Aunt Marise!"

"Why, it is? My birthday?" Marise opened her arms wide to embraces. "You dears—and I had forgotten all about it!" Their joy in surprising her, their worshipful affection, were exquisitely comforting at that discouraged moment. To the children of her old friends, Marise was a romantic figure, and they never forgot that she had no daughter to keep her anniversaries. They settled down into four girls, two on the arms of her chair and two on the arms of chairs adjoining, so that Marise looked between them to her daughter, holding her place opposite in determined aloofness. Mary evidently thought it a silly fuss, but perhaps, underneath, she felt a little left out, and Marise's voice was quick with tenderness.

"Girls, I want you all to know Mary Healy. Mary, this is Doris Thayer and this is Evelyn Thayer, and this Cornelia Kent, and that little red-headed imp is Alice Martindale."

They sprang up, laughing, to shake Mary's hand, charmingly cordial, and blankly uninterested. She was accepted without question as one of the numberless protegees, and they settled down again about Aunt Marise like a little flock of bright birds, eager for the opening of their presents. They were delightfully pretty and well mannered, trained and tended—products of a long expensive process, with voices that had been shaped by other languages from the time they knew their mother tongue; the contrast was cruel, and Marise ached for her baby. Mary was handsomer than any of them, she was nicely dressed in her fresh blouse and serge skirt, and yet the first glance would put her and them into widely different worlds. The poor darling must feel herself at a disadvantage.

If only it had been permitted to tell the truth! The girls would have been so madly excited, so glad and welcoming—Mary would have held the center to her heart's content. Marise had a rash thought of telling in spite of the prohibition, but Mary's brow was lowering, and she did not dare. The terrible young pride might resent the very fuss over her, since it came only with the knowledge of who she was.

The girls had many things to impart—school adventures, news about saddle horses and southern trips. It sounded very young and gay. The "red-headed imp," seventeen and prettiest of them all, announced that "mother had an earl for dinner last night." She had seen him over the banisters.

"Oh, we had to dine up-stairs, too," Doris Thayer broke in. "The Boundaries Commission came to dinner. Father wanted us to hear the talk, but, as mother said, two of the commissioners would have to take us out, and that would be too hard on them."

Mary had forgotten to pretend that she was not interested. She was staring at Doris so amazedly that Marise drew out the explanation.

"Why too hard on them, Doris?"

"Oh, Aunt Marise, a girl of eighteen can't interest men like that! I should have been paralyzed with fright."

Candid modesty had no appeal for Mary Healy. She drooped back in bored disgust, and Marise hastened to another topic.

"Doris, Evelyn, whom do you think you are going to have for a neighbor next summer?"

"Oh, Aunt Marise! Really? Are you coming back?" They fell upon her with cries of joy. They "adored it," they were "crazy about it." She was to swim with them, to ride their horses, to come to their beach teas. Marise laughed across the clamor at Mary.

"I was telling you about father's old place on the sound, Mary. My land adjoins the Thayers'—well, about as a bird's nest adjoins an oak tree! But we are old neighbors, and they are dears about coming through the hedge when I am there."

Evelyn lifted her hand and kissed it. "It's such fun being with you—you listen so adorably," she explained. "Mother says that after we have visited you, it takes her two days to get us snubbed back into our places. Oh, Aunt Marise, won't you ask her to let me have an Annette Kellerman this summer? She makes me swim in a *skirt*.

"But it is because Evelyn is fat in the wrong places," Doris interposed with sisterly candor. "If she'd train down, mother wouldn't care about the skirt."

"Aunt Marise, won't you come to the Vacation Camp this summer?" Cornelia Kent pleaded. "You know about it, don't you? It's for poor girls, and a lot of us are going up for two weeks at a time, like scout masters. We'll teach them to swim and paddle and dance and all that. Little clerks and typewriters, you know, that have never—" Though no one had seemed to move, there was evidence that Cornelia had been kicked under the table, for she caught her breath and stumbled. Marise came to the rescue.

"It sounds splendid," she said tranquilly. "Have you heard of it, Mary?"

"Oh, yes;" Mary's indifference was superb. "Some of the 'little clerks and typewriters' in our office have been talking about it. It's a very kind charity, I dare say—if you happen to need charity."

Cornelia flushed crimson, looking so distressed that Marise could have shaken her daughter. A squeal of discovery from Alice Martindale changed the subject, bringing the girls about the Sunday supplement that she had picked up. It showed the portraits of a certain "Aileen" and the man she was about to marry, and brought out a torrent of information. The marriage was evidently looked on as a glorious adventure.

"They've taken a little tiny apartment, only seven rooms, and she's going to have just one servant," Alice announced. "Don't you think it will be a perfect lark? I went in the other day, and the maid was teaching her how to make a bed. Aileen was so funny and serious about it. I thought she made an awful mess of it, myself. I bet I could do it better."

"Bet you couldn't," said Doris.

"It may be romantic to marry on two thousand a year," Cornelia said decisively. "But wait till she always has to go in other people's cars, and see other girls manage so that she never has to pay when they do things together, and borrow a maid from her mother's when she wants to ask any one to dinner—I don't believe it will feel much like a lark. I think she's crazy."

"She's crazy about him," said Evelyn, rising. "Aunt Marise, the car had to go back, and Mademoiselle was to come and get us, but she ought to have been here before this. We are going to walk back across the park."

There was a general looking at wrist watches and starting up.

"With four of us, I don't see why we couldn't walk over alone," Doris began, but Evelyn cut her short.

"You know perfectly well, Doris, that mother wouldn't let us."

"Well, I am going to call her up and ask her," declared Doris, but before she had reached the telephone, Mademoiselle was admitted, to a general burst of French chatter.

They dropped back into English to say good-bye to Mary Healy, but the fervent cordiality of that courtesy won no response. Mary's expression was that of one who is not to be lightly taken in. When the little babel had died away, Marise tried in vain to win her child from the defensiveness that squared her shoulders and the suspicion that clouded her eyes. To be suspicious and on guard was only the normal result of the poor girl's experience, and Marise would have passed over the visit without comment, pitifully aware how young vanity can ache. But Mary had something to say on the subject. It grew visibly behind her darkened brow until it could no longer be kept in.

"Mrs. Jaffrey, those girls were my age, or nearly."

Marise had seated herself at her desk, the ornamental desk in the big room where she wrote ornamental things like notes; but she laid down her pen and leaned back.

"Yes, Mary."

"Would I have been brought up like that?"

Marise considered. "Not quite. You would have gone to the same school, I suppose, and had the same friends; but we were not millionaires and I should have wanted you to know more about practical things. The Thayers were not so rich once—Mona Molloy left them to come to me because she had two babies to take care of. But of course the Martindales and the Kents were always—"

That was not what Mary meant. "I'm asking, would I be treated the same way?" The very idea made her reden. "Sent up-stairs when there was company—snubbed back to the tune of children-must-be-seen-and-not-heard, and me grown up—asking, 'May I?' and 'Must I?' and not take a walk by broad daylight without a monkey-face Frenchwoman—"

"Mary!"

"I have to say things the way I see them! I wasn't brought up to put on manners I didn't mean and kiss people's hands for being good enough to listen to me, and to have to have private lessons before I could make a bed. I'm not a lady, thank goodness!—I'm a working girl; but I do what I please, and I'm anybody's equal. But I suppose you'd rather I was like them."

(To be continued)

Grandpa Patrick Murphy Spud,
Of good old Irish Cobbler blood,
They buried him deep in sand and clay,
But he used his eyes and found his way
Up again to light of day,
Sam learned how to spray and bug him,
And won a prize when at last he dug him.

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Law for the Farmer

LESLIE CHILDS

A little knowledge of the general principles of law covering transactions of frequent occurrence is a big help. It not only enables a person to look out for his rights when trouble occurs, but what is more important, it often prevents the trouble from ever occurring. The things, for instance, which are not thought of or are overlooked when an agreement is made, cause the misunderstandings later on. In important undertakings, such as buying or selling land, drawing up leases, etc., a good lawyer should always be consulted. Nor is it possible to give advice through general articles which can be accepted as authoritative or definite, particularly as the law varies in different states and then, too, the circumstances in any two cases are rarely exactly alike. It is our purpose, however, in this and a number of succeeding articles, to lay before our readers some points about common transactions which the author feels it is well to bear in mind.—EDITOR.

FARM FIXTURES.

Where a farm is sold, mortgaged, rented, or disposed of in any other manner, that works a change in the ownership or those in possession, the question of what are fixtures is frequently an important matter. It may involve the disposition of fences, buildings, manure, straw, and a great number of property items, that upon occasion may be of considerable value.

Broadly speaking, fixtures may be described as personal property that is merged with land by reason of its annexation to it. Such as fences, where the posts are embedded in the soil; buildings that are erected upon solid foundations; in fact, anything, personal in its nature, that is affixed to the land in such a manner as to make it a part of the realty.

Under the application of this rule where land is sold, generally speaking, all things affixed to the land, as buildings, fences, etc., pass with the soil. So, too, if one in temporary possession of land places upon it property of this kind, attaching it to the soil, in the absence of an agreement to the contrary, the things so placed become a part of the land.

The above rule is of particular importance to tenants renting from year to year, or longer periods; for if they place fixtures upon the land, in the absence of an agreement relative to their removal; they may be forced to abandon them when their tenancy expires. Though this rule is subject to the following exceptions:

If the tenant places fixtures upon the land, for the purpose of conducting his particular business, he will have the right to remove them. That is, if the fixturues can be removed without causing damage to the land. For example, it has been held that a baker's oven, gas and water piping, used for domestic and trade purposes might be removed at the expiration of the tenancy; and this despite the fact that the articles were slightly annexed to the building, though they could be removed without doing any substantial damage to the building.

Also, temporary buildings erected for trade purposes, cider mills and presses, shelving and counters, used for domestic purposes and to further the carrying on of the tenant's business, have been held removable by him. And nursery trees, when planted by the tenant for the purpose of sale, have been held agricultural fixtures and subject to removal by the tenant.

So, too, it has generally been held that wheat straw is not a fixture, and that the one owning the straw may remove it. On the other hand, manure, produced from the stock ordinarily kept upon the land, has generally been held to be a fixture, and not subject to removal by a tenant or other person temporarily in possession of the land.

And where a tenant replaces an old or worn-out article, that was attached to the house, by a new one, he will not be permitted to remove it when he gives up the place. As where the furnace in the house was in bad condition, and the tenant replaced it with a new one, and upon the expiration of his tenancy he attempted to remove it; it was held he could not do this, that the furnace had become a part of the realty and belonged to the owner of the property.

From the above illustrations it will be seen that the question of what are fixtures is a broad and complex subject. Each case involving the point must necessarily be decided upon the particular facts surrounding it, having regard for the laws of the state in which the dispute arises; and, as the laws of the different states are not uniform on the subject, a general rule that would apply in all states would be difficult to give.

So where real estate is to be handled, in any manner involving its possession that will in turn concern the disposition of articles, that may or may not be classed as fixtures, the safest plan is without doubt to cover the point by a contract in writing. Especially is this true where a farm is rented with the knowledge that the tenant will be obliged to place buildings, fences or other property of a like nature, upon it.

In situations of this kind, both landlord and tenant should insist that the stipulation, relative to the tenant's right to remove the fixtures that he places upon the land, are set out in the lease. If this is done a fruitful source of after dispute and possible litigation will be avoided, which cannot help but be to the advantage of both.

Indiana.

THE SWEEP OF A WORD

EDGAR L. VINCENT

HAVE you not stopped on some morning when you have been out at your work and listened to the sound of your own voice as you sang some song or called away across the valley to a friend down in the home? How the words you sang or spoke echoed and re-echoed when they were caught in the fingers of that mysterious, unseen force and tossed back and forth. Perhaps it was the side of some building which served to fling the notes of your song back upon you. Or it might have been the trees of the forest yonder. Whatever it was that acted as the sounding board, over and over again the words kept on swinging back and forth until at last, tired with their wandering, they died away in the distance and were forever lost.

Forever lost? Ah, that seems so; and yet it may be doubted whether any word spoken or song sung ever really ceases to reverberate. They may be lost to your ear and mine and still go on God only knows how long, for once spoken they can never be recalled as long as time shall last. Only the ear of God may catch the strains of your hymn of praise after the echoes of the woodland have stopped sending it back to human ear; but He ever listens, ever hears, ever heeds.

How lightly do we speak one to another! We forget what we have been saying almost as soon as the words have left our lips. We laugh, we give way to joke, we flatter ourselves that our sparkling, often cutting, quips are interesting and entertaining others. But soon it is all over, so we fancy, and no one is the better or the worse for our moment of glittering conversation. And yet, do you think that He who gathers up the faintest breaths of song and call and keeps them for all eternity will ever permit the words we speak, whether seriously or thoughtlessly, to die out and be lost? It cannot be. He will never let them pass away.

With how much of importance, then, does this thought invest our every word! If we say the gentle, tender loving word, it lives in the heart of the one to whom we are speaking. More. It is passed on from him to another, and still another to all eternity. For that word has put something into the soul of our friend which was not there at first. How? God knows. And if the word be harsh and unkind and void of feeling, in just the same way it goes on thundering down the ages, to hurt and mar and spoil the life of all who hear it or catch its reflection in days to come.

The sweep of a word! Think of it! Then weigh carefully the spoken word, the song or even the thought, for sooner than we know that may slip away and become an instrument for good or ill throughout the ages.

Tests Disprove an Old Theory

The old theory that charring butts of fence posts and telephone poles preserves the wood has been disproved by a series of tests recently conducted by the Forest Products Laboratory of the Forest Service, United States Department of Agriculture, on fences with charred and untreated posts of varied species. The charred posts proved in tests to be even less durable than the untreated ones.

Theoretically, an area of charred wood around a post should prevent decay, because charcoal does not decay or encourage the growth of fungi. But the charred area around a post is not usually a solid covering. It is checked through in many places. If posts are seasoned before they are charred, the charring does not reach to the bottom of the season checks which are always present. If green unchecked posts are charred, checks will open through the charred part as the wood seasons. In either case the uncharred center of the post is exposed to fungus infection and will decay as rapidly as untreated wood. Charring deep enough to resist decay would undoubtedly weaken a post of ordinary size.

Good Results from Co-operation

Co-operation between bankers and farmers in the acquirement and distribution of high-class animal and plant stock is helping to promote a prosperous condition in Wisconsin, the United States Department of Agriculture is advised. The Banker-Farmer Exchange conducted under the auspices of the Wisconsin Bankers' Association listed 2131 head of cattle, valued at $281,000, during its first year of operation, and obtained inquiries for 1,698 head. The exchange has its headquarters at Madison, the state capital. A commission of 5 per cent., paid by the seller, is charged on all sales made through listings to cover expenses, but no charge is made on sales outside the listings.

When a farmer lists live stock for sale he signs a statement on the listing bank that the animals are healthy and sound, except when otherwise stated, and that the cattle have been or will be tested for tuberculosis. Male animals to be used for breeding purposes must be pure-bred. With every transaction, two banks and the exchange are concerned, and if there is any dissatisfaction, both banks know it. A breeder can not afford to risk his standing with his bank by misrepresenting his product. Should he attempt it, he loses the privilege of the service. The farmers are fast becoming acquainted with the exchange and are forming the habit of reporting their wants to the local banks.

Burn Out Weeds and Insects Now

"A general fall clean-up of rubbish and places where rank growths of vegetation are to be found, will go a long way towards freeing the farm of insect pests," according to H. E. Hodgkiss, extension entomologist at the Pennsylvania State College, who recommends such steps before winter sets in, as fields and orchards where fence rows are kept free from dead weeds and grass during the winter months usually suffer much less from insect pests than those of more easy-going neighbors.

The burning off of weeds and other growths where insects are likely to spend their winter or hibernating stage, will increase the mortality of the pests and leave a smaller number to fight in the spring. Stalk borers of potato, grasshoppers and plant lice can be largely controlled by burning fence rows and ditches in and near cultivated fields. It is not only a practice that entomologists advocate, but it is a general "better farming" practice.

Planning some community good times this winter? Why not give a play? Send to the New York State College of Agriculture at Ithaca, N. Y., for F 153 on "The Little Country Theater."

High Priced Corn and Hogs

R. B. RUSHING.

Is there any money in hog raising when corn prices are soaring as they have been of late? Some people could not see any, but with me the profit from the porkers comes in spite of the conditions prevailing.

In the first place, however, at our farm we have a nice, large, roomy pasture. This is rather hilly, partly covered with timber and containing a large pond and running stream of water for the most of the year. Clover, blue grass and timothy and some red top furnish this pasture most of the year when pasture can be had at all.

My sows are very long, deep and of superlative smoothness. No animals less than three years old have farrowed any pigs for some time, and I have one in the herd that has been farrowing pigs for seven years. I am a great believer in keeping the sows as long as they produce and raise large and profitable litters, and I have found this a money making proposition, for the older sows bring so much stronger and better pigs every way than the young gilts do. Too often I have seen farmers disposing of their sows when even two or three years old. At that age, and older, they produce much stronger pigs. The boar that mates the sows is, of course, a pure-bred boar.

The sows have the run of the big pasture until about two weeks before farrowing time, when they are brought up to the hog houses and located in individual pens until farrowing is over. During the nice weather they have the run of a small lot during the daytime. My sows receive a little corn until two or three days previous to farrowing time. Then they receive a slop made of bran and a little crushed oats, and on the day of farrowing no feed is given. By this method my sows carry no excessive fat, though they are in good condition at farrowing time. The wide range of pasture provided seems to help keep them in good condition while carrying the suckling pigs.

My fall fattening hogs are turned into a pasture following fattening cattle, and fed what corn they will eat, besides that which they receive from the droppings of the cattle. Of course, many of the earlier pigs are quite large and are growing rapidly. The pasture which they have been running on having made quite a development in them, they are ready to be put on heavy feeds to be turned off in the fall. I am not an advocate of feeding lots of high-priced corn without plenty of pasture, I rather think that would be a losing proposition, as the hogs will not make sufficient growth on just corn to warrant the high prices. But where a ration of corn and plenty of pasture is provided, there is surely a profit to be made in the operation.

Hogs have been selling high, as well as corn. Pasture is the cheapest element of food for either hogs or cattle, and, in fact, without it neither will do as good as if they were supplied with an abundance of pasture. Or at least I have never been able to make my cattle grow as rapidly on dry feed as when the pasture was supplied also, and the same case has been with hogs. But when hogs are raised on small amounts of corn up to fattening time then they can be fed corn with profit. Even in fattening time I never confine them in small, muddy pens, as I have often seen done, but have them where they can have good succulence, and then supply all the corn they will eat and they fatten very rapidly and cheaply.

I am led to believe that the pasture is the only remedy to produce pork at a profit when the other feed is high. When the feed is high is a good time to test the ability of a man to see if he can so combine the feeds as to make a success of the business. This may mean the turning point between success and failure. Thus we must study and learn how to turn what might ordinarily be utter defeat into a case of real success. Just lately hogs have gone off some and I see so many farmers selling out and quitting business. Say, listen, it is always the stickers, thinkers and the workers that win out. Stick to the hogs, plan out cheap forage rations, and then work to bring the plans about and you will find yourself a master hog raiser some morning when prices are up. *Illinois.*

Successful Feeding Requires Close Study

Last year the writer learned of a feeder who failed to give his sheep the care necessary to make the most out of the feed given to them. This young man has a knowledge of the theory of feeding, having at one time taken a course in it. While, according to report, other feeders around him made a profit, his loss amounted to $3600.

Close attention is necessary. Regular cleaning of feed bunks, good water and lots of it, clean bed, salt and kind individual treatment are essentials in feeding. The successful feeder lives with his animals, watches over them and is always ready to provide better feed and other favorable conditions. No one can instruct him exactly, he must learn the details by doing and love for his animals is the first requisite. Animals soon learn a good caretaker. They enjoy to see him come and as he moves among them they take pleasure in his presence. Feeding live stock is not all theory. The practical is equally important and the man who succeeds must think about his animals and be always ready to do what is necessary.—R. W. Clark, Colorado Agri. College.

Watch these Young Pig Owners

Pigs may be pigs, but not all pigs know enough to eat enough to make hogs of themselves; or perhaps it's a case of the pig's owner not knowing enough to give the pig the right kind of food! However that may be, Dorothy Byrnes and Joseph O'Connell, 12-year-old members of the Livingston County Pig Club, proved to several thousand persons at the New York State Fair in Syracuse, that they know how to feed pigs. They won all the demonstration contests in their home county and went to Syracuse at the expense of the state fair commission. There they proceeded to win the agricultural demonstration contest, made themselves the state champion agricultural demonstration team, and carried home the gold medals.

They had their pigs right with them to testify to the truth of their statements and the testimony those pigs gave was both visual and vocal—entirely convincing. Dorothy and Joe told what and how pigs should be fed and then mixed the feed and did the feeding. Commissioner of Agriculture George E. Hogue said they gave the best, most complete and most convincing extension talk he had ever heard in his 30 years as a farmer.

Shrinkage in Hay

Shrinkage occurring in good market hay is due almost entirely to a loss of water, which has no feeding value, say specialists of the United States Bureau or Markets. Such shrinkage seldom causes an actual money loss to the farmer, because any loss in weight in baled hay is borne by the shipper, who usually receives the hay as soon as it is baled.

If the shipper stores baled hay for speculation, there often will be a money loss caused by shrinkage, because he has purchased an excess amount of water.

There is practically no loss of dry matter in market hay that has been properly cured. Proper curing is indicated by a bright, natural green color. Improperly cured hay may lose dry matter, but such hay is not in demand in any of the terminal markets.

The water content of hay at different periods of curing and storage, methods of making hay to prevent excessive shrinkage in storage, methods of determining shrinkage on individual farms, and other general shrinkage information of interest to all agencies engaged in the production and marketing of market hay is given in a publication soon to be issued by the Department of Agriculture.

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Is worth even more in your fall feeding than in summer because your hogs can't get any pasture in November. Struven's Fish Meal gives you more digestible protein for a dollar than any other feed you can buy.

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SELECTED REGISTERED BERKSHIRE PIGS 2 months old, both sexes W. F. McPARLAN, Furnice, Pa.

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Buy Kow-Kare from feed dealers, general stores or druggists.

DAIRY ASSOCIATION CO. LYNDONVILLE, VT.

NOTE: The Trade-mark name has been changed from KOW-KURE to KOW-KARE—a name more expressive of BOTH the PREVENTIVE and CURATIVE qualities of the remedy. There is not the slightest change in formula or manufacture.

The Discontented Man

T. M. BRAY.

Once upon a time there was a man who owned a large farm. It was in a beautiful country. The land was fertile, and his orchards and arbors and gardens yielded abundance. He had horses that he worked hard and forced as it came toward the end of the day, with the whip. He had cows of the best breed, from which he secured the greatest return from the minimum amount of outlay. He had hogs that were fattened to kill. He had sheep whose fleecy coats he cut every year until they became mutton. He had chickens that lay better than the chickens of his neighbors, and brought the best price when offered for sale in the market. He had a wife who did always as she anticipated he wished. He had two boys and two girls who respected and obeyed their father.

On the farm were level fields for grass and grain and corn, sloping fields for grapes and orchards, hilly fields and new for his buckwheat, and mountain fields for wild berries.

A brook ran through the farm where fish sported until the farmer wanted fish for his dinner. Ice formed on his ponds and furnished winter's fun until it was cut and put into his ice house for summer use.

Trees grew in the woodlands, among which the rabbits and squirrels and game birds played until the farmer desired game on his table.

But the farmer was discontented.

The children and his wife were satisfied. The children found in the woods, the orchards, the berry patches, and by the stream all that they could wish for. The wife found in her employment, the bringing up of her children and the beauty of her surroundings enough to keep her constantly happy.

But the farmer had grown tired of it all; life became monotonous, for he was dulled to all that was beautiful about him. To him the farm was only a piece of land that held the world together. He wished that he might be out of it all so long and earnestly that he finally wished himself dead and in Heaven.

So one day he took sick and lay helpless in his great, soft feather bed. One night as he lay there he fell into a sleep and in his sleep he kept repeating that he wanted to go to Heaven.

After a while he awakened with the consciousness of someone being in his room. He opened his eyes and beheld at the foot of his bed a figure clothed in light.

"I am a spirit," said the thing, "that has been sent to convey you to Heaven, for which you have so long prayed. Come with me!"

And the farmer was at once conducted through a passage as dark as the night itself.

On emerging from the passage a vast expanse of level land greeted him. Neither being nor object met his eye until the plain lost itself in the immeasurable distance.

"What is this?" asked the farmer.

"It is Heaven," replied the spirit.

"But I do not want this kind of a Heaven," said the farmer.

'Nor did you like the kind of an earth God gave you," replied the spirit.

"But the land is too level," protested the farmer.

"If you want hills you need only to wish for them," responded his companion.

So the land became just as the farmer wished it, with hills and mountains and valleys and level places.

"There is no vegetation here," suggested the farmer.

"Wish for what you want," again replied the spirit.

So grass grew in the lowlands, and wheat and corn and orchards and forests came into being about him.

"I see no streams here," complained the farmer.

"Wish again."

And a brook began to flow down the valley.

"There should be a house, a stable and outhouses."

"Wish for them."

And the buildings arose from the ground.

"There should be life, animals and birds and fishes."

"Wish for them."

Horses neighed in the stable, cows grazed in pastures, pigs grunted in their pens, sheep nibbled the grass by the roadside, wild animals played in the forest and fish sported in the brook.

The farmer looked on all that he had wished into existence in the heaven he had longed for, but still was unsatisfied.

"I should have companions," he suggested.

"Your companions must be chosen from these," replied the spirit, and as he spoke there appeared before him a multitude of human souls. "I am bidden to show you the souls only of these beings, and you must decide which of these you feel would afford you the utmost happiness through all eternity."

The farmer examined all of them carefully and at last chose five; the five most beautiful souls in all the throng.

"Have you finished your wishing?" asked the spirit.

"Yes," replied the farmer.

"Have you wished for all that you can conceive which will be conducive to your pleasure now and forever?"

"I have."

"Look again," said the spirit.

And when the farmer turned to all he had wished for he found himself looking on his own wife, his own boys and girls, his own farm, his own buildings, his own horses, his own cows and pigs and sheep and chickens. The fish were swimming in the stream among the cresses, and the rabbits played in his woodlands. The flowers in his garden that he had passed daily without notice nodded to him in their beauty, and their perfume came pleasant to his nostrils. The birds sang songs that he had forgotten since he was a barefoot boy.

"How can you wish for Heaven when you can conceive nothing better than you had on earth?" reproached the spirit as it departed.

The farmer awoke, for it was day, and looked out of his window on all that he had wished for.

New York.

Fight Insects Now With Plow

Fall plowing is the most universally effective way of controlling the insect pests that annually cause great losses to the grain farmer. It is much easier and cheaper, says the Bureau of Entomology, United States Department of Agriculture, to prevent an insect outbreak in this manner than it is to stamp out the infestation once it is fully developed. The Hessian fly, so destructive to wheat, is one of the insects that can hardly be eradicated once it is established in the crop. Fall plowing is recommended because it breaks up the soil and destroys the grubs and pupæ of many insects by exposing them to the sun and air.

Farmers' Bulletin 835, prepared by the Bureau of Entomology, tells how to control the most common and dangerous of the grain farmer's insect enemies. It gives briefly the life histories of the Hessian fly, army worm, cutworms, grasshoppers, white grubs, billbugs, corn-root aphis and wireworms, with authoritative data describing the characteristics of each pest and the best practical remedies for control. The bureau advises the grain farmer to plow in the fall, if possible; to keep a supply of insecticides and a spraying outfit on hand; to watch the crops carefully for an outbreak, and to report all outbreaks to the county farm adviser, or direct to the Bureau of Entomology, United States Dept. of Agriculture.

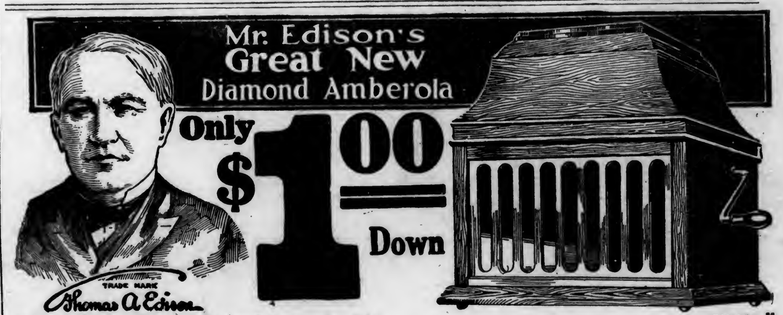
Timely Reminders from the Pennsylvania State College

Those farmers who may have immature corn in their cribs can prevent molding by salting. Use one pound of salt to three bushels by weight of ear corn.

Beets with their tops on, stored upright in cold frames, often keep in good condition over winter. They are of better quality than topped roots.

Some varieties of celery are easily injured by light freezes. They must be given some protection on cold nights, or used at once for table or market.

Tile drain those places where wheat, alfalfa and clover were heaved out last winter by frost. This work can be done during the late fall and winter months when general farm work has slacked up somewhat.



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The Practical Farmer

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THE QUESTION OF FEEDS

By W. F. McSPARRAN

THE subject of feeding farm animals of all kinds is always an active one with the thinking farmer. The term "thinking farmer" is used advisedly, for there are a great many matters of good farming that require sound, clear, reasonable thinking to carry them to successful endings. We cannot expect all farmers to be highly educated in all the exact sciences that may be actively applied to agricultural operations, and, indeed, I don't think it has been proven that this higher educational qualification is absolutely necessary to successful farming. That it is desirable, if only for the personal gratification and enjoyment of the possessor will be admitted, especially by those who have it, and in rare cases by those who have it not; but all of us know eminently successful and progressive farmers who by no expansion of politeness can be called "educated," except as being clear thinkers on the problems to be worked out practically in their business.

It is to the thinking farmer, trained or otherwise, therefore, that the feeding question is forever up for review—up and never finally settled, for each change of crop production and market values, separately or in combination, presents a new problem for a new solution.

The practical application of scientific investigations and findings has sufficiently well established the principles of animal nutrition for our guidance. Or perhaps it might be said that these scientific investigations have definitely determined why the practices of the fathers of feeding, the old, thinking, "uneducated" farmers, were practically correct. I remember when I was a boy a very successful hog raiser and feeder said to me: "I tell you, if you give me oats and corn, ground together and slopped with skimmilk, I will make a well bred pig do anything I want him to." Now, this man did not know a single thing about balanced rations, protein, carbohydrates, metabolism, nutritive ratios, vitamines and the like, did not know any more about them than thousands of his class of successful feeders do today. But, as I have said, the investigators have told us why my friend could mold his hogs to his will if he had corn and oats "chop," mixed with skimmilk, why with such feeds there was no need to bother about mineral matter, tonics, "stock foods," tankage and the fearfully and wonderfully made "rations" now at command of the feeder—if he can pay the price.

But not all swine raisers these days have a home produced supply of these feeds found so sufficient by my friend. As a matter of fact, whereas skimmilk a few years ago was a plentiful and cheap by-product in all general dairy and creamery communities, it is now a very scarce one where the butter making industry has been supplanted by the whole milk shipping station and the condensing plant. This condition has been brought about by the growth of the demand for more human food, and properly and economically so, for the reason that skimmilk, while a most excellent supplement in the pig ration, is much more valuable as a food for man.

Furthermore, the pig and hog can eat and thrive on wheat middlings, tankage and other by-products—such feeds and materials as are left after human foods have been extracted from the original products. It is found quite frequently that the manufacturer of oat foods for human consumption can afford to pay more for the farmer's grain oats than it is worth for the farmer to feed to his cows, horses and hogs, hence this valuable feed grain under such circumstances is withdrawn from the list of available farm feeds.

True, the residue from the mills, converting oats into human foods, finds its way through the feed markets back to the farmer, and while such residue generally carries considerable feeding value, we often find it masquerading in mixtures as having much more worth than it can possibly contain; for, after all, oat hulls are only oat hulls as they come from the farmer's thresher or his bin, and their journey through the hurly-burly of wheels and hum of mills of conversion and mixings will never make them anything else.

Also, the increased demand for human foods, as above noted, has wonderfully multiplied the mill output of all kinds of grain by-products. Generally speaking, these are all feeds of value in our farm animal rations, and quite worthy the attention and use of intelligent, thinking feeders. It is well, however, to regard them strictly as by-products, giving them full credit for their values and honest debit for their limitations, remembering that some of the most trained intellects are now employed in the making of many advertisements, and that many of the creations of their free pens are real works of art in their lines. But oat hulls remain oat hulls; and weed seeds and chaff and straws that come to the mills in the grains, have little added to their feeding worth by being ground. Cotton seed hulls and buckwheat hulls, and various screenings, when all mixed together, gain no virtue not inherent in them before they were assembled. These mixtures can be, and are, made more palatable to the innocent animal by the skillful introduction of small quantities of real

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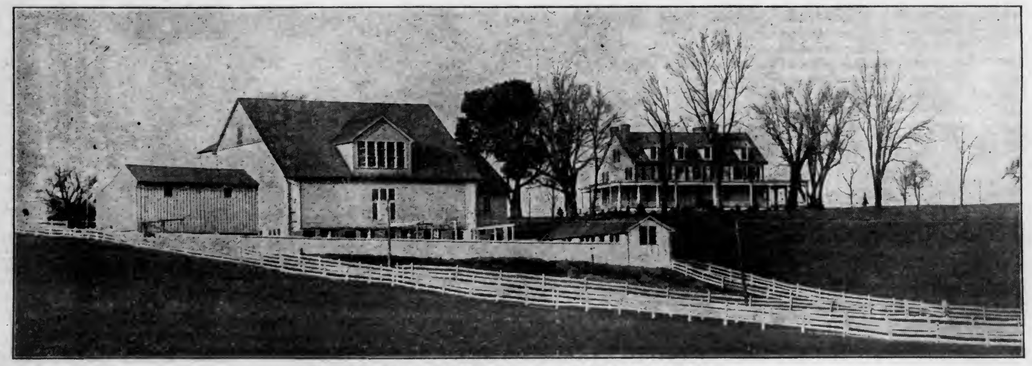

A fine group of Pennsylvania farm buildings. H. C. Irwin's farm, Chadds Ford

Working the Selling End

EDGAR L. VINCENT

FOR a long time it has been evident that the problem of marketing and distributing farm produce is one of the most serious with which the country has to deal. It no longer seems difficult to produce good crops on the average farm, providing the work is done in an up-to-date manner. It is when men come face to face with the selling and distributing end of their business that they find themselves up against a stone wall.

This unfavorable state of affairs has existed by reason of the numerous and practically perfect organizations which have been evolved by those who handle produce after it leaves the farm. Middlemen are organized. So are retail dealers and distributors of all names and natures. Even the men who handle grain, fruit and vegetables in transit have their organizations, as do the drivers who have no other work to do than to sit on a wagon behind a horse or on a truck and carry stuff from place to place. Everybody except the farmer is linked up with others for mutual support and advantage.

The consequence is that when the farmer has anything to sell the best he has been able to do in times gone by has been to take what was offered him for such commodities. Meekly he has asked, "What will you give me for my wheat, or corn, or my fruit?" And many a man has gone home after such an experience of delivering things into which he has put his very life feeling that he has not received enough to pay cost of production! If there is anything that will make a man's heart sore it is that very thing. I know, for I have been in that position more than once. It hurts far more than does the work, to think that one's fellows have been so unjust in their dealings.

The time has come, however, when the farmer is asking himself, "Is there not a better way than this?" and is answering his own inquiry in these decisive words, "There surely is, and I am going to find it!" It has taken him a long time to arrive at this conclusion, and in doing so, he has had for his guide the example set by those who pass his produce on to the consumer. "If it is a good thing for everybody else to join forces, why should it not be for my neighbors and me?" And it seems now that the farmer has really found a solution to what has been a vexed problem hitherto.

So thoroughly convinced are the farmers of this country at the present time that in organization lies their only hope of salvation that they are not only talking it over in their homes, but they are discussing the matter with their neighbors. Steadily the circle of debate is widening, so that local, state and national meetings are being held, with this subject at the very front, "How can we build up organizations which will cope with those of the distributors and dealers?" Vigorous language is used in some of these gatherings and there are those who have felt that now and then speakers take very radical ground in outlining what seems to them the way out of this old-time slough of despond.

For example, take the words of Mr. Lowell, of Fredonia, N. Y., Master of the National Grange of Patrons of Husbandry, uttered at the recent annual meeting. At that time he told those who listened with fast beating hearts, that if the national government did not soon take steps to relieve the farmers of the incubus laid upon them by unreasonable and extortionate distributors, marketmen and dealers, the farmers would enter into a great country-wide movement to fix prices for their own produce. This fairly startling utterance found an echo at another great meeting of farmers in the west a few days later, at which time preliminary steps were taken, if the results reached at the convention have been correctly reported, to form a farmers' co-operative organization which will include the entire country and embrace everything relating to the details of marketing and distributing farm produce. These movements are strictly in accord with modern scientific distribution of agricultural products.

As showing what will beyond question be accomplished when this national organization shall have come into perfect operation, we may turn to the work done by the Dairymen's League. When this movement came into being, farmers were at a great disadvantage, so far as concerned the sale and distribution of milk and milk products. Each man had to fight his own battles against the thoroughly organized body of dealers and distributors. Sometimes he sold his milk, or his butter, or his cheese at a profit. Oftener it was the old story of taking what he could get—whatever the dealers offered.

Today, through the most perfect organization ever effected by men of the farm, the dairyman is able practically to fix a price at which his products shall be sold. There are weak places in the government of the League, but these are being corrected as fast as possible; and even now it is only the truth to say that never has the dairy farmer in League territory been in a better position to get value received for his labor and a fair return on the time and strength he has invested in his business than he is today.

In the state of New York at the time of this writing a state-wide federation is being effected, still further to benefit the farmers of the Grange, the Dairymen's League and the Farm Bureau members. Stock amounting to a round million dollars has been subscribed by the members of these three organizations. A central office has been opened up at Syracuse. Executive committees have been appointed, the members of which are taken from each of the three bodies of farmers interested. Local managers are being chosen. Stores are being established to handle commodities that the farmer must buy, such as stock feed, fertilizer and grass seed. It is contemplated that soon the G. L. F. will be the channel through which farm produce will be marketed. Wool growers of New York have already consigned to the G. L. F. managers at Syracuse, large quantities of

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Parcel Post Marketing

A FEW weeks ago Charles R. Brown, of Wyoming, Kent Co., Delaware, who had produced a fine crop of apples, found that both the home price offered for them and the price apples were selling for in the distant market would not justify him in patronizing either market in the disposition of his splendid fruit. He therefore decided to try a producer to consumer plan through the U. S. parcel post, a subject to which he had given considerable thought. To test his plan he had inserted in a Philadelphia Sunday paper the following advertisement, giving his name and address:

"Dispense with the middleman and let me send you one-half bushel of select Delaware eating apples delivered to your door for $1.00."

Although apples were a drug on the Philadelphia wholesale market and there was no home market for them, when this ad. appeared the consumers in Philadelphia and other nearby cities and towns were paying 35 cents per quarter peck for their apples and not always receiving select eating apples at that. Mr. Brown's offer to deliver to the home a half-bushel basket of select eating apples meant that a consumer would receive a quarter peck fresh from the producer at 12½ cents as against 35 cents for the same quantity from his grocer or huckster. Here was a gulf between producer and consumer nearly 200 per cent. wide. In other words, under the old system consumers were paying nearly 200 per cent. more than Mr. Brown, the producer of the choice apples, was receiving for them.

The result of Mr. Brown's advertisement was that orders began to roll in on him thick and fast. After the first lots had been received repeat orders began to come in, accompanied by very complimentary letters from customers, expressing the greatest satisfaction with both the quality of the apples sent and the method employed of reaching the consumer direct from the producer. Furthermore, many of these pleased customers inquired whether he could furnish them with potatoes, both white and sweet, eggs, poultry, turnips, celery, etc. In a very short time Mr. Brown's supply became exhausted, and he has had to purchase apples from his neighbors, with which to fill the orders that are still rolling in on him by every mail.

This experiment demonstrates clearly two things which are of equal importance to producer and consumer, viz., that there is a wide gulf between producer and consumer of food products, and that this gulf must be narrowed, if not entirely obliterated, and the utility of the U. S. parcel post service as a direct means of the producer getting his products at the minimum of cost to the consumer. The transportation problem was, and is, the bane of all marketing associations, and the parcel post seems to be the solution. In the final analysis under this arrangement the producer and the consumer share equally in the benefits derived by their

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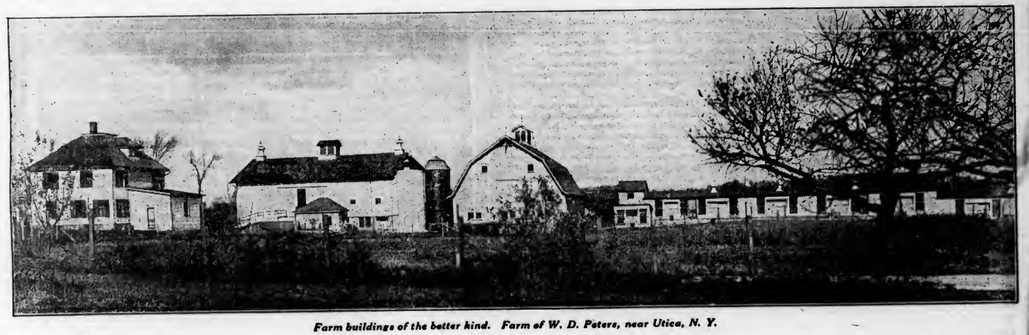

Farm buildings of the better kind. Farm of W. D. Peters, near Utica, N. Y.

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DECEMBER 1, 1920

I WANT to pass on to my friends a thought given me in a recent address by Paul Rader, the noted evangelist, pastor of the Moody Tabernacle in Chicago and president of the Christian and Missionary Alliance.

Mr. Rader had been speaking of the outpouring of the Holy Spirit on the disciples assembled in Jerusalem on the Day of Pentecost. You will remember that on that occasion the comment of some of the bystanders was "these men are full of new wine," and that Peter, replying, said, "These men are not drunken, as ye suppose * * * but this is that which was spoken by the prophet Joel," etc. Reading these words Mr. Rader pointed out the fact that no man can rightly understand life until he learns to discern in the history that is being made in his day and in his own personal experience that "*this is that*": This is that which was foretold by the prophets; this is that which God's Word tells me will come into my life if I do thus and so—or if I *don't* do it; this is that which God is giving me in answer to my prayers. *This is that!*

Think it over, friend. I did, and with wonderful results. At the moment Mr. Rader was speaking I had before me a problem over which I had been praying earnestly; events were shaping themselves in quite an unexpected manner and I was perplexed and not very well pleased. All at once it came to me, "Why, *this is that*—the answer to my prayers; all I have to do is to follow His leading—even if it isn't what I expected and I can't see more than a step ahead." That was only a few weeks ago, but already the "leading" is opening up the problem in a wonderful manner, far better than if it had been handled in the way I had expected. And during these few weeks in a dozen other matters I have suddenly realized with surprise and joy as God unfolds His purposes in daily events, ah, "this is that"—the promised experience, the answer to prayer, His leading. And in public events, too, I'm beginning to read a new meaning.

How about you, friend? Are you able to see when "this is that?" Or is life for you made up of good luck and bad luck and happenings and coincidences? Think it over, pray about it—and you'll find a new life, and a happier one, in the discovery that those three words, "This is that" will apply to, and explain, more events in your daily experience than you have dreamed of.

EDWARD T. WALKER.

Where Does the Profiteering Come In?

THERE are those who like to roll under their tongues like a sweet morsel the statement that farmers are profiteers. We wonder what these good folks would think if they were to read a report sent out recently by the national Department of Agriculture, showing that on 185 farms selected by careful survey of the states of Indiana, Ohio and Wisconsin, farmers did not produce enough to make a gain of five per cent. on their investment, while 15 per cent. did not on an average, covering the past five years, make an income per annum above $500 each? Farm incomes did increase as a whole on these farms in the period from 1916 to 1918, as compared with the returns from the same farms from 1912 to 1915. However, the purchasing power of a dollar was so low that the benefit of the gain made was practically wiped out. How would those who call the farmers profiteers like to do business netting returns like these? And the farms in question were occupied by good farmers, and surely they were located in good states. If this is profiteering, deliver us from any more of it!

Some Big Things Coming

OUR friends, the lawmakers at Washington, have some big jobs before them in relation to the interests of the farmers of this country. For one thing, there is the tariff. Our tariff laws are to be revised, so we are told, so that American farmers will not be compelled to compete with the world in the sale of their produce. The farmers are going to help the legislators remember this pledge, made so often during the recent political campaign, if they should happen to let it slip their memory, as has sometimes happened in the past. By the time every representative has received a bushel or two of letters from the folks back home, they will begin to conclude that it is about time to set themselves to work in real earnest. And then, there is the matter of the federal loan; the regulation of the tax laws so that they will be more fair and just; the old free-seed problem; the wastes through river and harbor bills; the postoffice and its improvement—all these things are surely going to have a place on the "order of business" at a very early day; for something dropped last election day, and our members of Congress are not as hard of hearing as they were before that, and they do not want the "operation" to be repeated right away.

We Doff Our Hats to Him

BEFORE Dr. Babcock perfected his machine for determining the butter-fat content of milk, few people knew just what they were feeding their babies or using themselves. Milk was milk and that was all there was to it. Ways of finding out the true worth of milk given by any particular cow were crude indeed. Dr. Babcock's machine revolutionized all this. Now we know just what we are feeding our babies and sick folks. We can find out the worth to us of every cow. Dr. Babcock has reached his seventy-seventh year. He is not a penny the richer for his machine. He never had it patented. He takes his pay in love, the love of millions who rise up to call him blessed every day. A little while ago this kindly old man leaned back in his chair at the laboratory of the Wisconsin College of Agriculture long enough to receive the congratulations of his friends. The University helped to make the day pleasant, but only a few outside the college knew anything about what was going on. If it is in order now, we will doff our hats to Dr. Babcock. May there be many more birthdays, doctor, and every one happier than those which have preceded it. All the world is richer for what you have done, and a day of reward is coming to you.

Apples Wrapped in Red

NOT in a good many years has it been possible for so many folks to feast their eyes on apples wrapped in red and to satisfy their longing for this excellent fruit as it is at the present time; for all over the country the crop of 1920 was immense, so much so that thousands of bushels went to waste on the ground because they could not be cared for.

Just now the apple wrapped in red is taking a place not very often accorded to it. Down in Boston there are two institutions which are to be blessed through the ministry of kind friends who will use the apple as the instrument for doing good to the inmates of these places. One of them is the Children's Hospital, the other the Convalescent Home. The authorities of these two institutions are seeking to raise an endowment fund of $2,250,000, and someone thought of wrapping apples in red tissue paper and selling them as one means of bringing about the desired end. On this crimson wrapper is printed a receipt for the money paid by the purchaser, showing that he or she has had a part in transferring the glow of the red apple to the cheek of some little one up at the hospital. And while this transformation is made, can we doubt that a little bit of the sunshine which brought the red to the face of the apple will find its way into the heart of every friend who has a share in thus lifting at the load of the Children's Hospital and the Convalescent Home?

Editorial Briefs

Just a word of inquiry for the young fellows, and we may as well take in the girls, too, who are knocking real hard at the farmer's door just now, seeking to be reinstated as helpers out of doors and in the house. You have been getting big wages since you went away, the biggest ever paid since the world stood. You have had what you called a good time spending the money you received. Now the question is, are you as good and as clean and as faithful as you were in those old days? Or have you contracted habits that will make you more critical and fault-finding? Will you watch the clock more now? Will it be harder work for you to do things right? Will "I don't care, so long as I get my pay," be your policy? Farmers who hire young men and women are anxious to know about these things. For they mean a great deal to them. Just stop now and think this thing over fairly, frankly and sincerely; and then God help you to say, "I will come back to you not the same, but better than I used to be." And there will always be a place for you, a place that will grow, as you grow.

One thing is sure. On thousands of farms machines have come in the last few years to take the place of hired men. It had to be so, by reason of the scarcity of reliable help. But while this is so there will always be a place for every ambitious, honest, conscientious young man who wishes to work on the farm. The machines must be operated. There are new and loud calls for the crops which universal intensive cultivation will produce. With machines and men working shoulder to shoulder a new day ought to come to the farm, and so to the world.

A fine and profitable business is being developed by some farmers who advertise apples, potatoes and other things for sale at their homes, offering as an inducement for town people to drive out and get their winter supply that they will sell at prices considerably below those that would have to be paid in the city. Many have sold everything they had in these lines without the trouble of marketing. Here is a good hint for other farmers.

Hearing that two peeled tomatoes, perhaps with a doughnut to go along, were sold at a restaurant in New York the other day for $1.60, The World of that city is moved to ask what the price might have been if the skins had been served, too. And then, there is the hole in the middle of the doughnut. That must not be forgotten.

Once it seemed best to the farmer to put his surplus earnings into the bank for safe keeping. Now he is coming to know that it is better to use a great share of this money for the improvement of the farm and the beautifying of the home. In this he is right.

The Garden in December

W. F. MASSEY

In our climate, of course, there is not much that can be done in the open garden during December. Gardening with glass sashes on frames is now as interesting as the outdoor gardening in summer. Anywhere from Philadelphia southward we can have lettuce heading in the frames. If you have frames well banked with soil and double-glazed sashes the winter garden becomes very interesting.

The advantage of double-glazed sashes is that we can keep frost out without having to handle mats. The dead-air space between the layers of glass will be effective in preventing the entrance of frost provided the frame is banked thickly with earth. The difficulty with the first double-glazed sashes was that dust accumulated between the layers of glasss and there was no way to get rid of it. They are now made so that the glass of the upper layer can be removed at the lower end of the sash and a hose will wash the sash clean.

The frame culture can be extended much further north with the double-glazed sashes. I have had a written statement from a western grower that the double sashes keep out frost at 5 degrees below zero. I have never had a chance to test this, since we never have much cold here.

The chief frame crop in the vegetable line is lettuce. Plants of head lettuce from seed sown in September are set in the frames as soon as large enough to move. Where the Big Boston is used the plants had better be set 8x8 inches, while the Tennis Ball, Belmont and All the Year Round will head well at 6x6 inches. This crop should head for Christmas and New Year. The frames can then be used for sowing seed of the Prizetaker and the Giant Gibraltar onions, sown thinly in rows and to be transplanted to the open ground in March.

On the Peninsula we can follow the January lettuce with early radishes and beets sown in alternate rows 6 inches apart, the soil in the frames being dressed with more fertilizer. The radishes will come off in February and the beets will then have 12 inches between the rows. They can now be gradually hardened to the outer air and in March the sashes can be removed to other frames and used for sowing seed of early lettuce for outdoor setting, and for hardening off early tomato plants.

Seed of cauliflowers for setting in spring can be sown in January along with the early cabbage plants. But the earliest cauliflowers are here grown in the frames. Seed sown as the lettuce seed in September are set in the frames, six plants to each sash. Then one of the smaller heading lettuces is used to fill out the space, the plants being set in November. The lettuce will come off in February and by the first of March the cauliflower plants will be getting up near the glass, and we gradually harden them off so that by the last, or often the middle of March, we can let them stay without the sashes, which are used on other frames for hardening tomato plants or sowing some kinds of seed such as the extra early carrots, radishes, etc.

The sashes will enable us to get some flowers in the winter and early spring. Seed of pansies sown in August can be set in the frames in October and by giving proper attention to airing in winter can be kept from getting too tender, and will bloom in late February and March, while some of the plants set in beds outside will make the early outdoor bloom.

Phlox Drummondii seed sown in September will make plants to set in the frames in October and will often bloom in early February and certainly in March.

"Who loves a garden loves a greenhouse, too."

So runs an old garden maxim. Of course, we can use the sashes in making an early hotbed for starting our tomato, pepper and eggplant seed if we have plenty of sashes to transplant them into for hardening for the garden. But a little greenhouse is far more convenient than stooping over a frame in bad weather. We can work in a warmed greenhouse at any time, no matter what the weather is outside. I have a miniature greenhouse attached as a little lean-to at the east end of my office, and I can step into it in a stride from my desk. It is made with three of the double-glazed sashes for the roof and two in side and end. There is a table 6x10 feet and 4 feet wide, a potting table in one corner. Then, hanging to the wall under the table, is a radiator coil of nine lines of 2-inch pipe each 9 feet long. The heat is supplied by a little boiler in the cellar. The boiler is what is called a tank heater and is intended to heat tanks for large baths. But it heats effectively over 100 feet of pipe and gives me all the heat I want for plants and in mild weather heats the office by opening the greenhouse door. The whole arrangement cost about $100 eight years ago, but would cost more than double that now. Here the seeds of the early garden plants are sown, and transplanted to the cold frames later, and I find it far easier than bothering with the making of a hotbed.

The cold frame can be used for carrying over fall sown cabbage and cauliflower plants in cold climates by giving all the air possible in mild spells and keeping the plants so cool that they remain practically dormant.

To Every Member of the Practical Farmer Family

Dear Friends:

The old "P. F." needs your helpful co-operation in an effort to make it a bigger, better, more useful paper, and knowing that our interests are mutual and that you have the welfare of the old paper at heart we are frankly addressing this appeal to you.

During the closing days of the war and the unsettled times that immediately followed it we were obliged, because of the shortage of paper and unsatisfactory financial conditions, to stop the efforts of our Circulation Department to increase the number of our subscribers, and we even had to cut down, as occasion offered, the number we were carrying on our mailing list. We greatly regretted this, but it couldn't be helped—and we are not "crying over spilt milk."

But the conditions have changed now and we are happy to again be able to begin an aggressive campaign to increase the number of our "family." And first of all we want to add "the friends of *our* friends" to our circle of friends and readers. You—each one of you—have friends and neighbors who don't take The Practical Farmer—who don't know much about it—but who would, on your recommendation of its helpfulness, readily give you a dollar for a 2-years' subscription—or at least 50 cents for a one-year's trial. And those are the very people we most want to reach—our friends' friends.

Now stop and think a moment: If each of you sends us just one new subscription, won't we have a *splendid* addition to the family? And some of you could easily send us several—think of that! If only 50 per cent. of you send us one new subscription each won't it help some? Well we certainly guess it will! And you'll be helping to make your paper a bigger one.

And what about your friends? Well, you're doing him, or her, a real service, too, we believe. We hope *you've* liked our paper the past year. It isn't a *big* paper—it's going to be bigger during 1921, we hope—but it's different in many ways from other farm papers, and we hope that these differences are pleasing to you. It's going to be *better* in every way during 1921 than in any year in its sixty-six years of life—that we can promise you. It's always had a reputation for helpfulness, but it's going to be more helpful than ever before.

We feel that you'll respond to our appeal in the spirit in which it's made—just because we are friends; but we want to reciprocate your kindness and we will send every one who sends us a new subscription a substantial token of our appreciation.

And what you do won't you please do *promptly*—it will be *doubly* appreciated.

Oh, yes—and about your *own* subscription: If it's due, or past due, won't you please help us by renewing it promptly? We'll appreciate that, too.

Yours for a bigger Practical Farmer Family,

YOUR EDITORS AND PUBLISHER.

Solving the Problem, Horses or Tractors

With the introduction of practical types of mechanical power on farms, the farmer must face the question of whether he should substitute the tractor for some of his horses. If he decides to introduce the tractor, he must determine what combination of horse and mechanical power will be the most profitable on his particular farm. To answer these questions accurately requires reliable information as to all the facts involved.

The choice of sources of farm power depends upon their relative profitableness. To determine which is the more profitable it is necessary to consider many factors, among which are the power requirements of the farm, the size of the power units required, the quality of work to be accomplished, the displacement of one form of power by the application of another, the total possible utilization of each form of power, the comparative cost of operations, with the different forms of power, the relation between the kind of power and the effectiveness of farm labor, and the effect upon the profits of the farm as a whole.

The United States Department of Agriculture has made a study of power units on a number of representative farms with a view to showing how the various farm operations create demands for different-sized power units, and to what extent power requirements are influenced by the type of farming. The result of this study, summarized in a publication entitled "The Horse Power Problem on the Farm," will be found of value to the farmer who is contemplating a change in the form of power used on his farm.

What Good Potato Seed and Good Care Did

All that is necessary to prove that a county farm agent can "practice what he preaches" is to glance at the potato production record obtained during the past year on the farm of Neisley Brothers, near Mechanicsburg, Cumberland county. Howard G. Neisley, a State College graduate, now agricultural extension representative in Dauphin Co., and his brother Cyrus, last spring offered to undertake the management of their father's farm in the Cumberland Valley. When potato planting time came it was found that the father had on hand enough home grown spuds to plant the usual field of five acres.

But the Neisley boys would have none of the local product, and sold this seed to purchase some guaranteed disease-free seed from other sections. As soon as the plants appeared above the ground they bought a potato spraying machine and treated the vines throughout the summer with Bordeaux mixture. Just to show "Dad" they planted a little of the home grown seed, and ran check rows with and without spraying. Increased yield through spraying and use of good seed will pay for their spraying machine the first year, and this is why:

The yield of home grown seed, which showed 40 per cent. "leaf roll" was 333 bushels to the acre; but the disease-free seed yielded an average of 438 bushels, or an increase of 105 bushels per acre. Local seed unsprayed yielded only 216 bushels, and spraying increased this by 117 bushels. So by using the disease-free seed and the sprayer, the Niesley brothers have 222 bushels more to the acre by getting away from the old methods, no small figure when they are able to guarantee their potatoes against rotting, which comparatively few Pennsylvania growers can do this year. To top off this record, their yield of 438 bushels per acre is the best in central Pennsylvania.

How Not to Keep the Boys on the Farm

J. P. G.

1. Keep them at work until 5 or 6 P. M. Saturday nights while neighboring boys go by to town.

2. Have them shell the yearly corn crop with muscular power while home from the public schools during the winter holidays.

3. At every opportunity quarrel with your neighbors. Your neighbors' boys (and girls) and your boys become very friendly by so doing.

4. It is proper for you to subscribe for good farm papers and magazines for boys to read during the long evenings. But send them to bed after through with the chores, about 8 P. M., so they will be up early in the morning.

5. Let the stock stand in the stable instead of exercising by pumping their own water on a tread power. It will exercise your boys and keep them out of mischief to push the pump handle up and down a couple of hours daily, especially on Sunday. Therefore, don't use a motor or a windwheel, either.

6. Assume a "dictatorship" attitude, crushing all initiative and making the boys afraid to speak their thoughts in your presence.

7. Boys must always be kept working. So keep a woodpile, buck and saw handy. They don't know that this work can be done cheaper by mechanical power and that while saving a cent by hand sawing they might be earning two. Of course, they work on the woodpile while resting.

8. Tell your friends what good boys you have but never tell your boys—tell them only their faults.

9. You feed, house and clothe the boys. What use have they got for a little money? Anyway, having assumed the role of "dictatorship," have them bow to you whenever they wish a little loose change.

10. Boys have no feelings. When they come home from school in the evening, keep them doing chores till bedtime and keep them at it again in the morning until the neighbors' boys have all passed. Your boys are just naturally bright, need no time for home study and enjoy the exercise, especially the hurry to school in order to avoid being late.

11. Do not be up-to-date by having a silo, or even to the extent of having your corn fodder crushed. The boys just love to handle those long stalks through the barn, barnyard and back again to the field.

12. Do not be as wasteful as your neighbors in allowing the boys to take a day off to attend the Fourth of July celebration, community picnic or county fair. The crops might spoil.

13. Make a practice of moving every year, so that when the boys get a little older they will have no old home ties, no scenes dear to their heart nor fond recollections.

14. Make life as monotonous as possible, giving them the impression received by a "dusty traveler," who applied at a farm house for temporary lodging. He was given permission to sleep in the barn providing he would help with the chores and one of the duties assigned him was pumping water. He performed this task daily to the song of "Pumping water and sleeping with the cows, pumping water and sleeping with the cows."

Pennsylvania.

Deepening an Old Ditch

The Pegg's Neck tax ditch in Princess Anne county, Maryland, is several miles long. It had filled with sediment and washed-in material and needed to be deepened 2 feet in order to properly perform its function.

As labor for such work is practically unavailable, county agent C. Z. Keller procured the services of an experienced man to show the farmers how to do the work with dynamite.

A point near Marion, Maryland, was selected for the test. Along the center of the bottom of the old ditch, holes were put down 18 inches deep and 18 inches apart. A half pound of 50 per cent. straight N. G. dynamite was loaded in each hole. The trial "shot" was of a 300-foot section. The work cost $9 per 100 feet, including labor. The ditch was deepened 2 feet and made 5 feet wide at the top. The propagated method of blasting was used. This is only practicable when the ground is heavy and saturated with water.

The middle hole in each section only contains a blasting cap and fuse. The discharge of this "primed" charge sets off the other charges down the line on both sides of the center.

A large number of farmers from all over Princess Anne county saw the blasting and after it was over several of them handed their names to Mr. Keller and asked him to have his expert visit their localities to give them cost estimates, based on tests, of some similar work which has been held up since the war by labor conditions. It is believed this method will solve the farmers' ditching problems.

Better to Build up Cheap Roads by Constant Care

It is better to build a cheap road and keep it in good condition by adequate maintenance than to build the most expensive highway and permit it to deteriorate for want of care, say officials of the Bureau of Public Roads of the United States Dept. of Agriculture.

Maryland, which has one of the finest systems of improved highways in the United States, if not the best, has consistently followed this practice. The originally improved roads in Maryland were comparatively inexpensive, costing only what the taxpayers were willing to pay for. The first few years the average cost was less than $10,000 a mile. In some cases the work entailed considerable grading and drainage, but in others it amounted simply to resurfacing the old turnpikes, which had already been graded and drained.

Generally the roads built at that time were macadam, 12 feet wide and 6 inches thick. Soon the width was increased to 14 feet. Later many were widened still farther, some very successfully, by adding concrete shoulders on each side of the existing macadam. This method of improving roads makes it possible for traffic to continue unimpeded on the road while the work is going on.

The macadam roads in Maryland have given very good satisfaction, but continuous care has been largely responsible for their success. The roads are constantly patrolled and no hole of any size is allowed to go unrepaired. Material for patching is kept at convenient points along the road for the use of the patrolman. From a relatively small investment in admittedly low-type road it builds up a better one from year to year, always conserving the bulk of the previous investment.

Giving Mother a Vacation

The member of the family who most needs an occasional rest from the daily routine, and who is least likely to get it, is mother.

This is what fifty high school girls of Chemung county, New York, thought and here is what they did about it, according to the Extension Service of the College of Agriculture:

All these girls had been members of the county junior project achievement club for several years previous to entering high school, and were looking for ways of using the knowledge and skill they had acquired. With this in view, under the leadership of Mr. Stanley, the county junior extension leader, they organized what they called an "achievement clan."

The obligation assumed by all members of this benevolent "clan" is as follows: The mother of the home which the girl represents is to be given each year at least one week of complete relief from all duties of the home, during which time the work and responsibility is to be assumed by the girl.

Mothers are to be urged to take this vacation week away from home, where mothers are prone to see so much work that they "must do."

Some mothers have elected to take their vacation period in small installments of a day or half day each week, but each mother of a clan girl is to have, at the least, a week of free time or its equivalent.

Handle makers, and the vehicle and agricultural implement industries, have found no substitute for high-grade hickory and ash. In the near future the farm woodlot will be called on more and more to furnish this material.

Our Triple Responsibility

The three great purposes of the Bell telephone organization, the three united interests which the management must ever keep in the fore-front, are: service to the public, justice to the employees, security to stockholders.

Service to the public must be as continuous, dependable, and perfect in speech transmission, under all conditions and during all emergencies, as it is humanly possible for science and skill to produce.

Justice to employees requires their careful training for the work expected of them, agreeable and healthful working conditions, adequate pay, an opportunity for advancement, cordial relations between managing and other employees, and every facility for properly performing their duties.

Security to stockholders demands earnings to provide dividends with a margin for safety and the stability of market value which goes with a large number of shareholders with a small average ownership.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy One System Universal Service
And all directed toward Better Service

Ins and Outs of Small Fruit Culture

DANIEL PROWANT

The farmer who owns a small farm of from twenty to forty acres, and finds that this is not sufficient for his needs under the present conditions, and does not wish to buy more at the present high prices might do much worse than try growing small fruits for market on at least a part of his land, provided it is suitable, or can be made suitable for fruit growing without too much expense. Fruit growing does not usually require the purchase of so much high priced equipment in the way of tools as do other forms of agriculture, and, after the grower is once well established in the business, is a pleasant and profitable occupation if properly managed. From the fact that, except at picking time, the work is pretty evenly distributed during the year, the labor question does not amount to as much as in some other lines of farming, and one or two men can care for quite a large fruit farm properly managed. Considerable outside help will be needed at harvesting time, it is true, but the work is pleasant and can be done just as well by laborers too young or otherwise unfit for hard work, so that there is usually not much trouble along this line. Women and children can often earn higher wages than men in gathering fruit, if paid per quart or bushel, as the work is not at all hard. I have seen boys and girls of ten who could make more money per day gathering fruit than I can by the hardest efforts.

The best results with fruit are usually on soil that is well drained, in a high state of fertility, and of a sandy or gravelly nature. This does not mean that fruit growing cannot be successfully conducted on other soils, but it will take more time, labor and expense to get the soil in proper condition before it will be a safe venture. Half of the battle is getting started right, and many costly mistakes can be made at this point if the owner does not familiarize himself with the essentials of fruit growing. No fruit will produce to its full ability on soils that are wet and swampy, and if the soil is inclined to be wet, very close tile drainage will be needed. If I were going to set a fruit farm I would begin preparations to this effect a year or two in advance of the date of the intended setting. Every effort should be made to have as much fertility and organic matter stored in the soil as possible, and a good plan is to plow down a heavy crop of clover the year before planting. Best results are usually obtained by plowing to a good depth during autumn, as the soil thus gets the benefit of the winter freezing, making it much easier to handle when it is to be worked down just before setting. Additional fertilizer in the way of stable manure used as a top dressing and then worked into the soil is highly beneficial for the smaller fruits if it can be readily obtained.

Intensive growing can be practiced to best advantage with the smaller fruits, for it is just as convenient and more profitable to arrange the field at setting time so that more than one variety is being grown at one time. Thus if the owner wishes to set an orchard with peach, plum or cherry trees, it will be several years before these trees come into bearing, and at least five or six years before anything like a full crop can be gathered. By undersetting this orchard with other small fruits such as raspberries, dewberries and others of like nature a light crop can be gathered the second year after setting, and a full crop each year thereafter as long as the bushes remain in bearing condition. By the time the trees reach maturity and are in full bearing the other small fruits will very likely have outlived their productive stage, and can be reset, or the work from that time on devoted entirely to orcharding, just as the grower wishes. There is nothing about the culture of berries that will interfere with the growth or proper handling of the trees, and if the orchard and the rows of berries have both been properly set, cultivation of both can be carried on at the same time without injury to either.

In most cases it is not a matter of any great importance whether the trees are set in the spring or autumn, there being some room for argument in favor of each method. Our own experience has never showed any marked difference in the way of growth or productiveness between spring and fall-set trees, provided the work was properly and carefully done. If the soil at the time of setting is loose and fertile the pits for setting the trees may be dug with spades, but if it is of a rather heavy nature it is better to blast the pits with dynamite. Where the pits are dug by blasting, fall setting will not be practical, as the fumes from the newly exploded dynamite will poison the trees, and but few of them will live. The best plan when this system of setting is used is to blast the pits in late autumn, and by spring the poisonous fumes of the dynamite will be gone, and the action of the frost in the bottom of the newly blasted pit during the winter is very beneficial.

In laying out the field for setting considerable care must be used to get all trees and plants set so that cultivation by horse or small tractor power will take the place of as much hand labor as possible. Such trees as cherries, apricots, peaches and plums are best set about 20 feet apart each way, keeping the rows straight in both directions. This is perhaps a bit wider than is absolutely necessary, but if it is desired to underset with berries it is necessary to do so, so that the berries can be set at the right distance to make cultivation in both directions practical. When set in this way, 108 trees will be required per acre, and only the best of young, healthy, certified nursery stock should be used. If it is then desired to underset with raspberries, blackberries, currants, gooseberries or others of a like nature the proper distance for setting will be in rows 5 feet wide, 4 feet apart in the row, and the rows kept straight in both directions, the same as in setting the trees. This form of setting will require 2178 plants per acre, and these plants should be from inspected stock, as the grower will not care to have his fruit farm infected with disease to start with.

When planted as outlined above, there will be three rows of plants between the rows of trees in one direction, and four rows the other way. This form of spacing places the berry rows so that they come in line with the trees is both directions. The entire field can then be cultivated both ways, thus saving much hand labor. Spring setting is always advisable for berries, and it is difficult to obtain the plants at any other time. If the prospective grower finds the price of plants prohibitive he may begin in a small way for the first year, and set the balance of the field the following year with plants of his own production. Propagation of most berry plants is a very simple matter; all that is necessary with raspberries and blackberries is to cover the tip end of the present year's growth of cane with about an inch of soil during autumn, just after the leaves have fallen. The cane is allowed to remain connected with the parent stock over winter, and a mass of fine roots will form during autumn, making an ideal plant for setting the following spring.

Cultivation needs to be frequent enough to keep out all foreign growth, and to keep the soil loose. Usually the fruit grower will have better success with the cultivating end of the game if he has his tools made to order to fit his special requirements, but, of course, this is not a necessity, but a convenience. It is not necessary to make the cultivation very deep, and after going through the field with the cultivator it is necessary to follow with a small harrow that will work between the rows without injury to the plants or trees. The idea of this is to leave the ground level, and to provide a surface dust mulch that will keep the soil below moist at all times. Wherever irrigation can be practiced without too much trouble and expense in installing, it is usually profitable in the way of promoting more rapid growth, and larger and better fruit crops, but in many cases it is not practical, the expense being too high.

(Continued in next issue.)

Even Thinning in Pruning

With the season for pruning at hand, one of the most important considerations in pruning a bearing apple tree is to thin out the wood evenly through the top. Much more satisfactory results are obtained by removing a given quantity of wood, in the form of many small branches, than by cutting out a few large ones, it is claimed.

The removal of large branches will cause water sprouts and large holes through the tops of the trees. Light thinning gives an even air circulation through the tops and checks sprout growth.

Five dollars worth of iron made into horse shoes sells for ten dollars, but made into hair springs for watches sells for more than a million dollars. Moral: Make raw materials count—feed good stock—Kansas Industrialist.

Uncle Ab says: The man who knows what he needs and how to make it can do more with a jack-knife than an ignorant chap can with a whole kit o' tools.

The frost is on the pumpkin now,
A sight to make men weep,
It's pretty and poetic, but—
A frosted punk won't keep!

A New Log Saw

Cuts Faster, Costs Less, Makes More Money for Users and Works While You Rest

A new improved power log saw, now being offered, outdoes all other log saws in cutting wood quickly and at little cost. A new 4-cycle, high power motor equipped with Oscillating Magneto—no batteries to fail you—makes the saw bite through logs faster than other log saws. It finishes its cut and is ready for another before the ordinary saw is well started. This log saw—the Ottawa—has a specially designed friction clutch, controlled by a lever, which starts and stops the saw without stopping the engine. Others have imitated, but no other power log saw has this improvement just like the Ottawa. The Ottawa Log Saw sells for less money than any power saw of anything like its size.

Patent Applied For

The Improved Model, 4-H. P. Ottawa Log Saw.

One man wheels this outfit from cut to cut and log to log like a barrow. Separate attachments cut down trees and cut up branches. Extra power lets the engine do heavy work of all kinds. Owners of the Ottawa Log Saw laugh at coal shortages and are making big money with ease, the machine doing the work. 35 to 50 cords cut any day, rainy or dry, by one man, are normal figures. And wood is approaching $20 a cord! The Ottawa is compact, simple, and durable. It sells for cash or easy payments and is guaranteed. If you have wood to cut the Ottawa Log Saw will be the most satisfactory machine you've ever owned. We suggest that you write the Ottawa Mfg. Co., 2364 Wood St., Ottawa, Kan., for their complete new illustrated book and prices, sent free to all readers of this paper.

WE HAVE TREES

HARRISONS' Nurseries have probably the largest block of two and three-year old apple trees in the United States—all budded from selected trees in our own fruiting orchards. If you filled to get trees this Spring, here is your chance to secure robust, healthy trees of the best standard varieties. Order at once for fall delivery.

Write today for free Fruit Guide, and Fall Price List.

HARRISONS' NURSERIES
Box 34 Berlin, Maryland

How To Get More Eggs and Save Feed! How to tell slackers and poor layers; how to feed to double egg yield; how to keep flock healthy; ventilate houses in winter; get good hatches, strong chicks—1,000 poultry secrets made plain in 58 lessons. Recommended by 25,000 students. Guaranteed to double profits. FREE BOOK, "Dollars and Sense," gives all the facts. Write today.
AMERICAN POULTRY SCHOOL
Dept. 1276 Kansas City, Missouri.

WANTED: Trained working orchard man to manage and superintend 30 acre orchard—600 apple trees, 8 to 9 years old. Ample ground to duplicate number of trees. Man preferred who will invest $5,000 to $10,000 in this proposition and make it go. Good location and climate. Railroad sta. on farm. Address, giving particulars, C. G. PIERCE, 905 Broadway, McKees Rocks, Pa.

LIVE POULTRY
Hay and all farm products wanted. Daily demand at good prices. GIBBS & BRO., 323 N. Front Street, Philadelphia. Est. 1848

FOR SALE All varieties of Rocks, Reds, Wyandottes, Minorcas, Hamburgs, Anconas, Orpingtons, Langshans, Brahmas, Leghorns, Andalusias, turkeys, ducks, geese, guineas. Prices low. Ralph H. Raby, Loudonville, O.

Silver Spangled Hamburgs Fine cockerels for sale, five months old, $3 each; 6 months old, $4 each; cock's, $6 each. PERLEY W. LAWTON, R. 1, Tladaghton, Pa.

S.C. Sheppard An. Cockerels 331 egg strain, $3.25. ED. HOLLENBECK, Maple Shade Farm, Breesport, N. Y.

Working the Selling End

(Concluded from page 342)

wool to be graded and sold when market conditions favorable to the farmers shall exist. Thousands of farmers have contracted for their next season's clover and timothy seed through the G. L. F. Men well qualified to judge of the worth of seeds are out today buying these things in the west. Mills are being established for the grinding of grain. Altogether the outlook for this organization is bright.

In the west and middle west similar local organizations are now doing business. But what is now proposed is to bring these all under one great form of government; and when that has been accomplished, the farmers believe, and with good reason, that they will have outgrown past uneconomic conditions and taken their place alongside other organized bodies of men banded together for their own best good.

With the passing of old-time conditions has come another important thing, and that is, the study of elemental principles of farm production. The farmer knows more positively than in the past what his milk and hay and other crops cost him to produce. This is demanded, so that the selling price may be justly determined. No one need think for a moment that the farmer will ever demand unreasonable prices for his products. He is not made that way. He only asks a just and a living rate for the labor of his hands, and he knows he is entitled to this.

Again, in consequence of this demand for accurate knowledge of costs of production, a widespread movement is on to find out what all cows are doing, for the purpose of convicting those that do not appear to be profitable. In other fields than dairying the same searching examination is being made into the economics of farming. Our day is big with possibilities and it only remains for the farmer to be true to himself, fair, honest, just and ready to sit down and reason with his fellows to enable him to take the place which rightfully belongs to him. *New York.*

Conquering the Codling Moth

That even the worst infestation of codling moth and curculio can be held in check by the proper application of sprays was proved recently at a field meeting held at the orchards of Lester Collins, near Moorestown, N. J., when the results of spraying tests carried on by the Extension Division of the State Agricultural College in co-operation with Mr. Collins, were demonstrated to a group of neighboring growers.

During the past few years the second brood of the codling moth has caused serious damage to apples in some places in southern New Jersey. The damage has been particularly severe on winter varieties of apples in some orchards about Glassboro and Moorestown. As high as 75 per cent. of the fruits have often been attacked by worms even where several sprays have been applied.

In order to assist the growers in meeting this difficulty, the Extension Division of the State Agricultural College selected a demonstration block in Mr. Collins' orchard. Seven sprays were applied and a total of 9900 gallons of spray material used, the entire cost, counting materials and man and team labor, amounting to $1.51 per tree. Self-boiled lime-sulphur and atomic sulphur were used in all except the petal-fall spray, and arsenate of lead was applied in every case.

Most striking were the results. Typical Ben Davis trees showed fruit 81½ per cent. perfect. Of the 18½ per cent. infestation on these trees,, 11½ per cent. was second brood codling moth, which made an insignificant side sting just penetrating the skin, and 7 per cent was curculio. There was no appreciable injury from first brood codling moth. York Imperial trees showed 77 per cent. perfect fruit, 20 per cent. second brood codling moth and 3 per cent. curculio.

Just to show the necessity of a thorough spray schedule, if a bad infestation is to be controlled, it was noted that on a Stark tree which did not receive the last two sprays there was only 37½ per cent. codling-moth-free fruit, with 61½ per cent. infestation. A Ben Davis tree in the dooryard which had received only a careless spraying had but 32 per cent. perfect fruit, with 61 per cent. moth and 7 per cent. curculio infestation.

Parcel Post Marketing

(Concluded from page 342)

close business relation, made possible by utilizing a government system of transportation, wisely and carefully worked out, but not yet appreciated by the general public as we believe it finally will be.

Governor Sproul of Pennsylvania recently addressed a proclamation to the people of his state, urging them to consume more apples and appointing a special "apple week," the object being to help market and consume Pennsylvania's surplus crop of apples. This was a timely thought on the part of the Governor. No doubt his action had an effect on the consumption of Pennsylvania apples, but with due respect and in friendly criticism, in my humble judgment Governor Sproul's effort would have been magnified a thousand times in results had he used his official arm in bringing about a closer business relation between the apple producers of his state and those who must have food to eat and recognize the wonderful health giving properties of the apple. He could have recommended the parcel post and direct dealing to realize his desire. It would not have cost the state a cent. It would have accomplished the purpose the Governor had in mind when he asked his people to consume more apples, which they would have cheerfully done had the people been able to secure the fruit at the minimum of cost. Official action frequently stands in abject fear of industrial associations and intermediaries dealing and growing fat at the expense of honest production of basic commodities, which are primary in the life of all people.

Through the parcel post system the government can help the producer span the gulf that has already too long existed between producer and consumer, stop the extortion practiced by public carriers and middlemen, who have gone too long unrestricted, and give to the consuming public of food crops, their food at the minimum of cost, which would assure the producer the maximum of benefit in the disposition of his products. Producers and consumers can meet here through an adequate government provision for mutual benefit, and stop for all time the wholesale robbery practices of public carriers and a great army of irresponsible middlemen. Individual experiments such as Mr. Brown's, point unerringly to a means which, if systematically applied, would solve the great problem of production and consumption. A. N. B.

Delaware.

Salt Bad for Chickens and Hogs

It should be borne in mind that hogs and chickens are very susceptible to poisoning by common salt.

A lady emptied ice containing salt from the ice cream refrigerator in the back yard. The chickens picked up salt enough to kill them.

A newly-wed made a cake of salt, presuming it to be sugar. It was thrown to the chickens and killed all of them.

Pigs were allowed to graze in a pasture with cattle where they had access to a salt lick; they licked the salt ravenously and all but three of the herd died.

Another case is reported where salt brine was mistaken for sugar water and fed to hogs with garbage, the pigs were poisoned and died the following day.

Salt poisoned hogs show no symptoms for several hours, when they are taken with dizziness, increased thirst, frothing at the mouth, diarrhœa and vomiting. Keep salt away from hogs and chickens.—Geo. H. Glover, Colorado Agricultural College.

It Pays to Advertise

The National Duroc-Jersey Record Association believes in advertising—or, in other words, letting the people know what you have to sell. The following is from a letter to its members on the subject of placing signs in front of their farms:

"The value of proper advertising as a medium to place your breeding establishment and your hogs before the public is a feature connected with your business that is of paramount importance. Advertising is the most effective force known for the purpose of selling your breeding stock for profitable prices. Without publicity of the right kind used to make known to the general public, the character and nature of your business, your time, money and energy invested is in a measure wasted.

"How many sales have you missed because interested persons passed your farm not knowing where you lived? How many persons daily pass your farm and have no means of knowing you or your business? Such persons are prospective buyers. It costs but little to acquaint the public with yourself and your business. A neat, durable steel sign erected in a prominent place on your farm will solve this problem for you. The cost of securing one is trifling compared to the value of the sign and the benefits derived from its display."

When in the woodlot, be on the watch for a trim little evergreen for the Christmas tree.

50 Eggs a Day

Yes—fifty a day. How? Read the letter below.

"More Eggs' Tonic is a Godsend," writes Mrs. Myrtle Ice, of Boston, Ky. She adds, "I was only getting 12 eggs a day and now I get 50." Give *your* hens a few cents' worth of "More Eggs," the wonderful egg producer, and you will be amazed and delighted with results.

$1.00 Package FREE

If you wish to try this great profit maker, simply write a postcard or letter to E. J. Reefer, the poultry expert, 5899, Reefer Bldg., Kansas City, Mo., and ask for his special free package $1.00 offer. Don't send any money. Mr. Reefer will send you two $1.00 packages of "More Eggs". You pay the postman upon delivery only $1.00, the price of just one package, the other package being free. The Million Dollar Merchants Bank of Kansas City, Mo., guarantees if you are not absolutely satisfied, your dollar will be returned at any time, within 30 days—on request. No risk to you. Write today for this special free offer.

Poultry Raisers Everywhere Tell Wonderful Results of "More Eggs"

15 Hens—310 Eggs

I used "More Eggs" Tonic, and in the month of January, from 15 hens, I got 310 eggs. MRS. C. R. STOUGHTON. Turners Falls, Mass.

"More Eggs" Paid the Pastor

I can't express in words how much I have been benefited by "More Eggs". I have paid my debts, clothed the children in new dresses, and that is not all—I paid my pastor his dues. I sold 2½ dozen eggs last week, set 4 dozen, ate some, and had 1½ dozen left. MRS. LENA McBROON, Woodbury, Tenn.

1200 Eggs from 29 Hens

The "More Eggs" Tonic did wonders for me. I had 29 hens when I got the Tonic and was getting five or six eggs a day. April first I had over 1200 eggs. I never saw the equal. EDW. BEKKER, Pontiac, Mich.

160 Hens—1500 Eggs

I have fed two boxes of "More Eggs" to my hens and I think they have broken the egg record. I have 160 white Leghorns and in exactly 21 days I got 135 dozen eggs. MRS. H. M. PATTON, Waverly, Mo.

$200 Worth of Eggs from 44 Hens

I never used "More Eggs" Tonic until last December; then just used one $1.00 package and have sold over $200.00 worth of eggs from 44 hens. "More Eggs" Tonic did it. A. G. THODE Sterling, Kans., R. No. 2, Box 47

Send No Money!

Don't send any money; just fill in and mail coupon. You will be sent immediately, two $1.00 packages of "MORE EGGS." Pay the postman upon delivery only $1.00, the extra package being *FREE*. Don't wait—take advantage of this free offer TODAY! Reap the BIG profit "MORE EGGS" will make for you. Have plenty of eggs to sell when the price is highest. Send today!

$1 Package FREE

E. J. Reefer, Poultry Expert, 5899, Reefer Bldg., Kansas City, Mo.
Dear Mr. Reefer—I accept your offer. Send me the two $1.00 packages of Reefer's "More Eggs" for which I agree to pay the postman $1.00 when he brings me the two packages. You agree to refund me $1.00 *at any time* within 30 days, if both of these packages do not prove satisfactory in every way.

Name.....

Address.....

.....

If you prefer, enclose $1.00, cash or money order, with this coupon. This brings your order a little sooner. C. O. D. pkgs. sometimes take longer to handle in the Post Office.

Wintering Bees Outdoors

GEO. W. PRICE.

The beginner in beekeeping should winter his bees outdoors. Outdoor wintering has many advantages and is easier than cellar wintering. The method to be used depends on the locality. In the Southern States bees will winter very well in single-walled hives, but, as a rule, it is not wise to try to winter that way north of 40 degrees latitude, although frequently the bees come through all right if they have a suitable windbreak. North of 40 degrees, however, some protection should be given. The small producer can best provide this by using the double-walled packed hive. Some double-walled hives are made with no packing between the walls. These are very little better than single-walled hives. The packed hive, however, usually winters quite well. Another plan that does quite well is to use a packing case for each hive. The case is set for a single-walled hive and the space between the walls of the hives and the case filled with packing material. The top is covered with packing material and the cover of the case set on. Dry-goods boxes may be used instead of regular cases, but as they are so irregular in size and shape, they are not much used.

Another method is to place the hives in a row under a shed, the shed facing the south. Straw is packed around the hives. This method is not very satisfactory, as the bees lose considerable heat by having one side exposed.

The best way to winter bees outdoors is to use tenement hives. This method is used by many large producers and is very satisfactory. A tenement hive is a large winter case. It may hold two colonies, or it may be large enough to winter a dozen. The sides and ends are usually made in large cleated panels of cheap lumber. These panels may be held together by hooks and eyes or by screws, so that the tenement may be taken apart and the panels laid away when the bees are unpacked in the spring. The roof is also of cheap lumber covered with roofing paper.

The tenement hive is used principally in cold climates where double-walled hives are not enough protection. Cellar wintering is the usual method in such localities, but it has many disadvantages, and the tenement hive is being more generally used.

One of the best and simplest of tenements is the Bartlett. This case holds four 10-framed colonies placed in contact with each other, two of the colonies facing one end and two the other. The floor of the case is raised from the ground about 4 inches, and the hives are raised from the floor about the same distance. The end panels are 24 inches high and 44 inches long. The side panels are the same height and 52 inches long. They are held together and to the bottom by wood screws. The cover of the case has a gable roof and is supported by a cleat across each end. Two slots are cut across each end panel and these are connected with the openings of the hives in such a way that the packing does not interfere. When the colonies are packed in the case the space between them and the walls of the case is filled with packing material. Packing material is also poured on top and the cover of the case set on. The bees should be placed in these tenements as soon as cold weather comes on and they need not be taken out until clover blooms. Supers may be put on before the bees are taken out from the case.

In wintering bees outdoors the importance of windbreaks cannot be overestimated. Even if the bees are well housed in hives, if the location is in the open where the wind has a good sweep, many colonies are likely to perish. Woods or bushes make the best windbreak, as the blast of wind filters through, very little of it striking the hives. A group of farm buildings does almost as well. High board fences are used as windbreaks to some extent, but they are not as satisfactory as woods or bushes, because the wind on striking the fence, glances upward, when it is caught by the blast above and forced downward, often striking the third or fourth row of hives from the fence. The rows close to the fence may winter very well, while those a little farther away often suffer heavily.

It is also important that bees form a good winter nest when wintered outdoors. A winter nest is a space of empty brood cells. The winter stores are placed around the nest, where the bees can get at them easily.

Often a beginner, on finding this space of empty cells, will insert a comb of honey in the center of the nest, thus dividing it into two clusters. Neither of these clusters will be as warm as if the two were together and if the winter is cold the colonies will suffer.

It is only fair to state that when bees are wintered outdoors they consume much more honey than when wintered indoors. The beekeeper should see that each of his colonies, after brood-rearing has almost ceased, has from 20 to 30 pounds of honey, depending on the strength of the colony. If the beginner will remember that a Langstroth frame full of honey weighs about 6 pounds, he ought to be able to estimate the amount of honey each colony has.

If the bees have not sufficient stores, they should be fed, preferably on granulated sugar syrup, until they have enough. This feeding must be done before cold weather.

If the beekeeper has been careless and his bees have not sufficient stores when cold weather comes on they should be fed hard candy.

It is important that any honey dew be removed, because if left in the hive it is liable to cause dysentery, and a loss of bees will result *Michigan.*

WHEN THE CREEK BREAKS ITS BANKS

EDGAR L. VINCENT.

A WET weather stream makes its way across the south side of our farm. In ordinary times this bit of a creek is peaceful enough. In fact, it is a very cheery sort of a brook, rippling down through the pasture and making music that I love to hear. The cows creep down its banks to slake their thirst at the little pools where the water collects. Birds sing in the branches of the trees that hang over the stream, and I have seen them dipping their bills in the cool water, lifting their heads as if in thanksgiving for this means of refreshing themselves.

But my brook is not always thus placid. On the days when rain comes down hard and fast, it often changes into a perfect torrent. The rivulet which yesterday trickled so joyously toward the valley now rages madly. No more music now in its voice. Rather, the sound terrifies every living creature, and birds and cows flee from it. The water leaps its banks and rushes wildly down the hillside. Stones lifted from their bed and hurled onward by the stream thunder and pound their way down the narrow channel. Ah! a fierce, dangerous and destructive creek is my hillside creek when it breaks its banks in stormy weather.

And what happens to this brook makes me think of the change which far too often comes over some men and women I know. On the days which are warm and sunny, these people are kind and good. They sing about their work. They smile when you tell them a story. They are ready to do you all sorts of good turns. You love them then and like to be near them. For they make life sweeter and happier for us all.

Then come the stormy days. You know about them. It may be they have come into your own life. And oh, how such moments do change things for us all! The creek is over its banks now! The life current rages and brawls and turns the day into a perfect terror! What is more to be dreaded than a soul that has lost control of itself? When anger becomes rage and rage turns into fury, happiness flees away and the home becomes a place to be dreaded.

But it need not be so. I know the temptation—has it not come to me many a time? I know the subtle power of a word someone has spoken, perhaps all without intending to hurt! The sweep of passion has come surging into my own soul and I have known the awful humiliation of permitting the tide to sweep reason away and carry with it many a love that was most precious to me.

And yet, I know it need not be so. There is a barrier we may lift against every oncoming temptation of that kind. It is to be found low at the foot of the cross! Nowhere else is there safety! But if when the storm breaks and night seems to be settling down over our souls we creep away into the silence with God and whisper it all to Him, soon we shall hear His sweet voice and feel His hand upon our fevered brow, calming our passion and bringing back the peace which passeth all understanding.

How good it is that this refuge, this barrier against the flood, is in waiting for you and me, no matter where we are! Whether on the farm, in the office or out anywhere on life's highway, we may stop and be with God! Then we shall go on with Heaven in our hearts!

$371 Profit from an Orchard Experiment

Enthusiastic over the results of spraying as carried on last year in the orchard of his neighbor Sam Buser, A. E. Anderson, of North Haledon, Passaic Co., N. J., offered his 31 trees last spring as a demonstration orchard for the good of the community and realized a profit of $371.85. The tale follows: Only in recent years has spraying been much heard of in North Jersey. The demonstration in Sam Buser's orchard at North Haledon in the summer and fall of 1919, by the State Agricultural College through its extension division, therefore, aroused considerable interest among the fruit growers of the vicinity, among them Mr. Anderson. He owned a small orchard of 31 trees which were scattered over 3 acres and had never been pruned or sprayed thoroughly. The first step, then, was pruning, and this, with the assistance of his boys, Mr. Anderson carried on in a very creditable manner.

Six sprays, the dormant, pink bud, petal fall, the 10-day and two later summer sprays were applied in all. The orchard was kept cultivated during the growing season and alfalfa sown in it in August. Horticultural specialists from the extension division did the spraying and kept account of the expenses. The total cost of spraying the 31 trees was $54.15, making the amount per tree $1.74. Pruning cost $36, fertilizer $10, cultivation $30 and harvesting $84, a total expense of $214.15 for the orchard. Seems like a staggering amount to spend on an old neglected orchard, doesn't it? But wait until you hear about the crop!

The yield was 300 bushels of nice, clean, attractive and salable fruit, which Mr. Anderson sold for $585. He was very well pleased with the $371.85 profit.

"I never thought it possible that two of the sprayed trees in my orchard could produce more fruit than the whole orchard had yielded before in a single year," he remarked incredulously. Sprayed fruit was 97 per cent. salable, while unsprayed fruit in adjoining fields was so badly stung by insects as to be practically unsalable. And because he believes in passing a good thing along, Mr. Anderson is trying now to get three of his neighbors interested in purchasing a sprayer with which to doctor their orchards next year.

Here's a suggestion for Christmas gifts the children can make: Tin containers, such as baking powder or coffee cans, make attractive boxes for holding the staple dry groceries. Paint the cans any soft color desired, preferably to match walls or woodwork in kitchen. The labels may be stenciled on in white or in a contrasting color.

A timely warning: Don't give Christmas presents because you must. Such a gift has nothing of the Christmas spirit.

Serving larger portions of food than can be eaten is not politeness; it smacks of foolishness.

Gathering and Using Medicinal Herbs

OUR EXPERIENCE POOL

We pay $2.00 for the best, $1.00 for the next best and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic under discussion and suggest subjects for future discussion. Contributions must reach us 15 days before date of issue.

TOPIC No. 1306, JAN. 1.—What is the most important thing you learned about farming this past year and how are you going to "do it differently" in 1921? We all make mistakes or guess wrong once in a while, but it's the wise man who profits from his experience.

TOPIC No. 1307, JAN. 15.—Stump pulling vs. stump blowing. Please give us your experience, or that which has come under your observation, on either or both sides of this moot question, being sure to state the *conditions* under which the particular work was done.

Miss I. E. B., Franklinville, N. Y.—We find medicinal herbs are of great value for family use, also for stock. We grow sage, wormwood and spearmint. Smartweed, yarrow, catnip, boneset and caraway we gather from the fields in early autumn. All except the caraway we tie up in bundles and let dry, then put away in clean paper sacks. The caraway seed we gather to use for cakes, etc., and for gas on the stomach.

We have never sold any herbs except sage, but have always gathered certain kinds for family use.

Smartweed steeped in vinegar we use for sprains on the stock, as well as ourselves. Yarrow, when steeped and drunk freely we find good for dysentery. Catnip and boneset we use to break up colds. Boneset we have used with good success for stomach troubles. Take a couple of handfuls of boneset to a pint of water, steep until of a deep amber color and take half a teacupful before meals. Wormwood steeped in vinegar we find a splendid remedy for sprains or swellings of man or beast. Bathe the afflicted parts in the hot liquid twice a day. Sage when made in a tea with milk and sugar added, is enjoyed by children, to whom we give it for worms. We also use it freely in seasoning sausage, meat roasts, etc.

Mrs. E. B. L., Morrison, Va.—As every crossroads store keeps a line of remedies for all ailments nowadays, few people seem to know of, or care to trouble with, the many native herbs. Some years ago a doctor showed me how to cure a boil caused by a bruise, and which had rendered a man's hand almost useless. He told me to gather buds from sassafras bushes, bruise them and cover with boiling water. In a few minutes a jelly-like mass formed, which was applied as a poultice, as hot as could be borne. This soon gave relief, and several applications drew all pus from the sore. Then, by advice of same doctor, I made a salve by stewing the leaves of stramonium (jimson weed) in fresh lard; this, when cool, was spread on cloths and bound round hand, and soon healed it. This was in spring and the buds and leaves were fresh, but they can be picked and dried and are still good, but need longer soaking.

In my childhood's home we grew horehound, and from the leaves made a tea which was used to cure colds, also to make a "cough candy." The stalks, with leaves, were hung up in bunches and dried for winter use, just like the sage and thyme which were used for flavoring. A soothing cough syrup was made from the bark of slippery elm, also from wild cherry bark. And cases of diarrhœa were cured with a tea made by boiling the roots of blackberry bush, but I don't know what proportions were used of any of these, though people seemed to be quite as healthy when depending on these home-made remedies as in these days of patent medicines.

W. H. H., Prince George, Va.—One of the best remedies we ever tried for coughs and hoarseness is the old-fashioned field mullein. Just get a handful or so and boil the juice out, then add sugar as if you were going to make sugar candy and cook the same way. After it gets done pour into a large pan or dish to get cool, and crack into small pieces. When you have a cough or cold eat a piece occasionally. You will be surprised how quickly it will give relief. It can be used either in a green state or dried. It is a good idea to gather a supply and store away for winter use, as it will save a good many doctor bills. We never sell any; simply keep enough for home use. It is better than all the cough mixtures you can buy. The above is the only kind of home-made herb medicine we use.

Mrs. C. S. F., Louisville, Ky.—Although we never made a practice of growing them, we used to search the fields for the roots of May apple, and the woods for ginseng, lady slipper and yellow root. We never used them in the home for medicinal purposes, but dried the roots and sold them, usually to the small town grocer, for what he would give. I dare say we would have received more if we had shipped to dealers or commission men in the city, and should we ever enter the practice again this is what we would do. After returning from a searching trip in the fields or woods the roots were carefully washed without breaking, then carefully placed on a paper or board in the sun to dry. To dry in the shade was too slow, to dry in the oven one was too apt to burn or scorch the roots, so we considered the bright sunshine the best place. After the roots were thoroughly dry they were sold at so much per pound, the ginseng usually bringing between $5 and $6 per pound, while the other roots brought only a few cents per pound.

Knowing little of the medicinal properties of most plants, we hesitate to use them, but have seen many kinds used in many homes for many purposes, but rather doubt their value as we have seen them used. The plants we know about are usually made into teas, the chief value of which we believe to be in the large amount of water taken into the system, rather than in any virtue of the plants.

W. R., Carbondale, W. Va.—In the hills of West Virginia we have many kinds of herbs and roots which have medicinal value. It is our custom, in October, to go to the forest and gather the roots of ginseng, golden seal, Seneca snake root, Virginia snake root, lady slipper, St. John's wort. The ginseng we sell on the market, but the other roots we keep for home use and for our neighbors, as they are very valuable and often save a doctor's bill. We also gather boneset, life everlasting and fever weed to put up for the winter, as these herbs are very valuable to break up colds.

Mrs. E. M. A., Ashville, N. Y.—My best friend is pennyroyal, and if I were obliged to go into winter quarters without it I should fully expect to pay a liberal toll to the doctor before spring. When a cold has developed, especially if it is already interfering with free breathing, I steep enough dried stems and leaves to make a heaping teaspoonful or two if they were powdered. This makes a pint bowl of strong tea, which we finish with sugar and cream. Drunk piping hot just before retiring it is ideal for bad colds and we pulled the worst "flu" case in our family through last winter with practically nothing else and no doctor.

Another good stand-by is boneset, though we never use the latter for colds. It is ready to gather when just in full bloom, and the flowers are the choicest part, but leaves can be used. Don't cook it! Just break a handful of blossoms into a pitcher, add a pint to a quart of boiling water and set in a cool place until cold. Prepared in this way the bitter tea that pours off is very palatable to a deranged stomach that requires it. We test the need by that fact—if the stomach welcomes the drink it is the thing it needs, otherwise it isn't. I never do anything to any herbs except to gather them and hang in a warm, dry place until dry enough to pack in sacks away from the dust. Catnip is very useful for children, but I can't see that it has much effect upon grown people. However, a judicious use of herbs saves many a doctor bill during the winter.

How to Select Corn for Exhibit

Nearly every corn field produces some good show ears; the thing to do is to locate them. This can be done most easily by setting aside the best ears as they are being husked or hauled to the crib, and by making a final selection of 10 show ears from the first choice. They are then ready to take first to the county, then to the state show.

The good show ear is primarily a good seed ear. This means that first of all it must be well matured. The grains should be bright, plump and hard, indicating that they are capable of producing a vigorous sprout. Entire freedom from mold or discoloration in the kernels, germs and butts is necessary. Grains must be free from cracks and blisters, and not too rough and chaffy at the top. So much for production characteristics.

As for breeding characteristics, an exhibit of 10 ears should show uniformity, which is the best expression of trueness to type and of the care which has been used in breeding. The ears should look as nearly alike as possible in size, color, shape and other points. Off-colored kernels or cobs indicate mixture, and ears showing this can well be eliminated. The grains should be of fair depth and the rows straight and carried out well in butt and tip. A slight furrow between rows is permissible. The butts and tips should be well filled and rounded out and the butt hollowed out and not too large.

One reason for all this talk about the value of different foods is that there is a direct relation between a well-balanced diet and good health.

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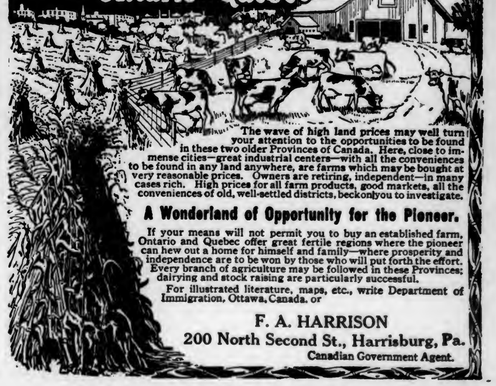

The wave of high land prices may well turn your attention to the opportunities to be found in these two older Provinces of Canada. Here, close to immense cities—great industrial centers—with all the conveniences to be found in any land anywhere, are farms which may be bought at very reasonable prices. Owners are retiring, independent—in many cases rich. High prices for all farm products, good markets, all the conveniences of old, well-settled districts, beckon you to investigate.

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JANUARY 1.—What "get-together," community welfare or social events are going on in your neighborhood this winter—especially those which you think other sections could take up to advantage? Social recreation of the right kind, with perhaps a little "mental improvement" thrown in, is a mighty important thing. If there are no socials, entertainments, fairs, bazaars, plays, lectures, concerts, etc., planned, what do you think would do your community the most good?

JANUARY 15.—Several subscribers are asking for information about cheese making at home. Who can give us directions from personal experience for the making of one or more kinds of cheese at home? Be brief but explicit, please.

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

Answering Christmas Present Problem

Mrs. N. W. W., Port Crane, N. Y.—I am sending a photograph of some things that cost almost nothing, and made very attractive Christmas presents. Top row to left, a boudoir cap of a round piece of net no good any more in a net curtain, but that much at least still whole. Over the shirred cap, with its inch-wide frill around the face, was placed a round composed of 24 s. c. sts. in a chain ring of about 6 chs., and in each of these a chain of about 20 fastened each in the s. c. st., next. From that point to the finish follow the directions for the chs. of 20, ch. in ch. until it is big enough to cover the top of the cap. This is so simple a child can crochet it, and one spool of lavender sansilk made this dainty cap cost just ten cents.

Next is a handbag made from a piece of corduroy left from a child's coat. The beaded decorations were from an assortment of old beads and were strung on fine wires and sewed into place in rounds, though other figures could be used. I do not embroider, but this method looked just as well.

Next comes a scrap of fur long enough to reach around the neck with a few inches to spare. This is placed on a white double frill of malline once trimming a summer hat, and one end of the fur is finished with a rose and buds made of bias folds of three shades of pink silk, one wound around another, the darkest shade in the center. The leaves were cut from green velvet.

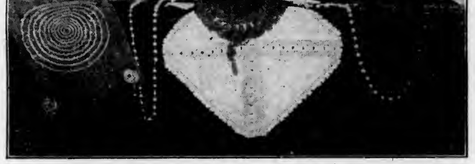
The wreath on the hat is of sweet peas, and these are made of 1¼ inch squares of silk shirred up and placed two together, fastened securely, caught to stems of green stem wire, and a small artificial seed culot pulled on to the stem and pressed well up to the silk flower, where it is fastened. These sweet peas, left each on its long stem, the stems pinched in curly appearance like the natural ones, make a charming corsage or muff bouquet. Select colors that look like the natural flowers—lavenders, pinks, white, cream, a little tan, some reddish shades—just any wee scraps of samples and left-overs.

The lower row, left to right: Handsome shopping bag of leather-colored cotton felt. Remnant—cost 10 cents. Almost too good to believe. Transfer design covered by a blue braid couched coarsely on to the felt. Here and there an amber bead, left from making paper bead portieres, decorates the motif. Little rounds of the braid at all four corners with here and there a bead, finishes the decoration. The sides and handle are corset steels, and the handle is wound with the blue braid. The tassels were old brown ones, combed, cleaned, trimmed and finished with blue sansilk to match the cord.

The center bag is of two rounds of olive green crochet silk (sansilk only), and may be made to suit one's taste. The top of the bag is not sewed up, but crocheted over to make a place in which a cord of the crochet silk, or cotton, is run. Crocheted drops stuffed with cotton finish the cord. The lining is gray satin left from a re-lined coat. The sansilk is the only expense, and the new fiber silk would be still glossier and more attractive. This is the most expensive present I have shown.

The centerpiece on which this bag rests is made from the four corners of linen left from making a large, round lunch cloth, and would have been waste material. The pretty insertion separating them and the edge is made of crochet cotton, a coarse variety.

A pretty pin tray that does not show so well is made of a left over scrap of wide ribbon held to its tray service by two little embroidery hoops. The hoops were a size unsuited for the owner's use, and were practically worthless. They are wound with half-inch ribbon, but other silk, one edge carefully



turned in, would do as well. Each side of the tray has a ribbon loop handle and a small celluloid ring is on each loop.

The beads to the left, as those to the right, were made of salt and corn starch, so exquisitely that they are no "chestnut." If so-called salt beads are made of the finest and best ingredients, perfumed with oil of roses, or other really good perfumery oil, they are well worth wearing. Mine are old rose strung with jet and irridescent white, and a wonderful shade of peacock, the blue so popular for winter sweaters and hats, and these are strung with gold and black and make a peacock blue that has distinction. Two tablespoonfuls corn starch are stirred together with enough water to make the consistency of cream; three tablespoonfuls of finest table salt are heated on top of the range until the salt crackles. The salt is then stirred into the corn starch, the dough worked and kneaded until it is fine and very smooth. Then oil paint, such as artists use, is worked into it until it is perfectly blended, and about three drops of oil of roses is worked into the dough in the same manner. The beads should be pierced with a large pin when dried about an hour, then left to continue drying for ten or twelve hours. All night is a good time to leave them. Black beads look so much like the expensive rose beads that, scented with oil of roses, few can tell the difference. Old things are not chestnuts if they are rendered exquisite by good taste and perfection of workmanship. Beads are popular. Why let a good thing so inexpensive as a salt bead "die?" I love my peacock string, and my old rose string harmonizes with a sand-colored dress with pink showing old-rosily under the georgette sleeves of sand color.

Did you know that wallpaper rolled into stout cylinders of several thicknesses, and of varying lengths, is the foundation for some interesting building material for the wee folks? Make some in short, stout blocks and some in longer lengths. The last thickness of paper is pasted down securely. Each piece, or rod, or block, is given a thick coat of orange shellac. When these are dry they are very beautiful to look at, may be washed off when really dirty, and will build towers, temples and pigpens with equal fitness. The kiddies will vote for the pigpens, no doubt. You know how? Two rods laid a distance apart, rods crossing these over each open end and then another and another tier of rods until the pen is high enough to keep piggy safe against tomorrow's butchering.

Is a cuff Brownie a chestnut? My little nephews think not. Cut a man's old-style white cuff down to about 5 or 6 inches in height and about 10 inches circumference. Sew it into a cylinder shape, sew a round piece of bright cloth smoothly over one end, insert a big glass ally and sew a capped shape piece of bright cloth to the other end. Sew cloth legs with white cuff feet to the piece sewed smoothly on one end, for the legs and feet of the Brownie, and add a wee coat with arms or cloth and bands of cuff material, and paint as funny a face on the manikin as you can. This Brownie, or a pair of them, which is still better, will turn the most amusing somersaults if given an inclined board, cloth covered (the ironing board is just right), for his performance.

Mrs. W. H. H., Prince George, Va.—Christmas is now coming on apace, and as you open this practical paper you will wonder just what is in store in the way of suggestions for gifts. Each year brings its novelties, its fads, its dainty little gifts in pinks and blues, ribbons, laces, etc., which are stored in some dustproof place for safe keeping. You seldom think of such unless it is to wonder if moths have discovered their whereabouts and are enjoying them as a tempting morsel.

But the day comes to most of us when the supply of bath towels runs low, handkerchiefs dwindle down to but two or three that have no holes in them. Then you think of Christmas gifts and of these nicknacks long stored away, and wish that your well meaning friends and relatives had seen fit to give you only a handkerchief, or the large towel that you now happen to need. I make a plea for the practical gift in this line, or one that is satisfactory, a blessed satisfaction the whole year around. Such gifts as above are not costly and may be given to anyone.

Now come the best and most helpful gifts which most of we country people have on hand at this season, which our city friends and relatives will appreciate much more than a handkerchief, tie or towel. No matter how much ready cash our crops have brought this year, there are some still crying for the necessities of life. Every person must eat and be clothed. Hams, fresh pork, sausage, eggs, both kinds of potatoes and apples are equally good to all, and will make ideal gifts for your city friend, your son, your daughter, mother or father. A gift of any of these things will be highly appreciated. A bushel of potatoes or apples is a princely gift to those without, while a five or ten-pound pail of snowy home-made lard—well, ask the city housewife who is compelled to use "compounds" to express herself over a gift of this kind. Such is the ideal gift.

The above is my idea and advice, as there are many gifts within our gates far better than those without, more badly needed, more highly prized than the dainty novelty which is more costly and often worthless. Simply stop and think for a moment! What would we do without Christmas to renew our youth and faith, and emphasize for us the fact that there is good will in the hearts of all true men and women?

Miss E. A., Stroudsburg, Pa.—My idea for gifts for women folk of the city this year is balsam pillows. After gathering the green hemlock branches I pile them in a corner in a warm room. After a short time the needles drop off readily and I gather them into a muslin bag. My standard size pillow is about 12x18 inches, although they may be made any size desired. I fill the bag about half full with the needles and sew shut. Then a slip of either gay cretonne or of plain white muslin, as for an ordinary bed pillow, is made. I usually crochet an edging on the muslin slips, and close either kind with snap fasteners. There are very few persons who do not enjoy the fresh noonday smell of a balsam pillow, and they are very good for relieving headaches. Then, besides, there is the regulation crochet work. I have found that dainty nightgowns, camisoles or envelope chemises with crochet yokes of knot stitch or filet crochet are always acceptable. Also bureau or table scarfs with filet crochet corners.

For the kiddies in the city we always send several cars of pop corn and an exceptionally large red apple, highly polished. As most children love to see things grow, a flowering bulb or two, to be planted in a bowl of pebbles and water are great fun.

To think up gifts for men folks is always a proposition to us. There seems to be so little that they need that one can make at home. We usually fall back on either a collar, tie, suspenders, handkerchiefs, slippers, cigars, tobacco pouch or a flashlight. But when all things fail, there is always one thing to rely on, that makes a fine gift, and that is a good book. If chosen judiciously and with care, a book makes an acceptable gift for young and old alike.

Mrs. J. C., Ethridge, Tenn.—For presents to our family and friends the busy farm sister feels that she has accomplished more if she gives something characteristic, and of use to the individual. There are many little extras, however, that we may prepare in a short time, allowing us to deviate from the old path of stand-bys.

Numerous ideas offer suggestions for grown sister, mother and lady friends. One is a box of talcum powder with fancy cover. I get rose scented powder and crochet cover, applying an Irish rose on one side and lacing ribbon through upper meshes of color to match rose. The stylish tab collars for round-neck blouses furnish variety of work, as they may be embroidered, tatted or crocheted, using for pattern the favorite flower of one to whom it is to be presented. A growing flower bulb is an ideal gift. Something unusual to hold door open is nice. Cloth animals stuffed with sand, or tall round bottle filled with sand, with rag head and clothes to represent Old Dinah. I sent to the gulf and got some sea shells. Some of these gilded with the word "Pins," make excellent small favors, and there is a heavier shell that makes a suitable and convenient soap dish.

Brother in the city sends mother and sister the latest sheet music, which is appreciated. I send my city friend a package of fresh nut meats for her cake or candy, a jar of preserves, rag rug or something different than she sees constantly in shop windows, always accompanied by a sprig of mistletoe, evergreen or a bunch of ferns.

Home-made toys, fancy work, etc., always please small boys and girls. Animals, bean bags, etc., for the little boy, and for wee girlie, besides velvet suit and tam for dolly (made from scraps left from her own clothes). I must make plenty of small quilts for winter use with her miniature family. A small broom is a practical gift for her, and may also be used by mother in cleaning out corners. Gifts for baby may be selected from various patterns of bootees and bibs to suit the individuality of the child.

A gift for hubby, brother or father is a perplexity, but monogram washcloths and towels please them, and perfume sachet bags are nice. Collar buttons cannot be found when in a hurry, so I devised a plan. Give him a small crocheted basket, such as individual nut basket made with a close stitch, to hang on dresser, with card attached bearing this injunction:

"If your head is not a 'muttons',
Use me for your collar buttons."

Fancy match scratchers may be made in different patterns, with sandpaper applied. And I notice an ad. in a late magazine of three pencils for 50 cents, with name engraved. These would surely please anyone. Peculiarities and needs of our particular family offer thought for individual suggestions. Something that will please and that is not absurd should be selected.

Mrs. C. S. F., Louisville, Ky.—I do not know whether they would be considered an old stand-by or something different, but I intend to give my husband some home-knit woolen socks for Christmas. I have never made a similar gift to him before, but I feel sure he will appreciate them, inasmuch as his old ones are getting pretty well worn and he likes nothing better than warm woolen footwear in cold weather.

For some of my lady friends I am making handkerchiefs with a tiny bit of embroidery in one corner and finished with a crocheted edge. For me this is something "different," for I usually buy, rather than make, these handkerchiefs, but I think a bit of one's own handwork is often appreciated more than that which money can buy. And besides I am blessed with more time than money, so that I can make them cheaper than I can buy them. For the benefit of my little three-year-old daughter, I think I shall buy patterns for making the Teddy bear, kitty, dog, doll, etc. These I can make at a small cost and they will afford her endless fun and amusement. Not all these toys will be given to her on Christmas, but from time to time I shall make her a new or different one, thus keeping up the interest. One dear old lady that I know is going to receive a box of "good eats," for I think nothing else would please her better.

Miss A. E. G., Buchanan, Va.—One little woman made a really handsome handkerchief "chest" last Christmas at very little cost, and now "hubby" can always find a fresh handkerchief, and he never could when they were kept in a drawer. Get a wooden box—one of the deep, oblong cigar boxes would answer—some dark cretonne with unobtrusive design, some ornamental handles and small hinges, if desired to have a real chesty box, though the handles may be omitted. The one mentioned had handles taken from an old dressing case, but very pretty ones can be had at a good ten cent store. Cut a strip of cretonne long enough to go around sides and ends of box and lap well at a back corner, where it is securely glued. The strip must be at least an inch wider than the depth of the box, so that it may be glued down on the inside, being careful to fold the corners neatly. The lower edge is glued under the bottom, which is then covered with strong paper. Rubber-headed tacks may be used for feet, if desired. The top is covered the same way. Light-weight cardboard cut slightly smaller than inside measurements of sides, ends, top and bottom are covered in the same way with plain sateen (silkoline may be shirred or plaited on) and glued securely into place, thus hiding all raw edges of materials and making a dainty lining. For a girl's box these linings may be padded with sheet cotton sprinkled with sachet powder.

A reading glass made a very useful, enjoyable gift at moderate cost. All the family uses it, looking for thorns in fingers, examining small insects or flowers, to bring out details in photographs and maps, etc. A flashlight is also an inexpensive gift that is useful the year round.

We know a family that finds it most satisfactory to pool their Christmas money and buy a "house gift," that all may use and enjoy, instead of spending it on individual trifles.

Mrs. L. E. D., Richmond, Va.—The right time to begin planning next year's Christmas gifts is during this year's festivities. One sees so many novel gifts and suggestions that it is wise to jot down the most striking lest they slip the memory before another twelve months roll around.

The old stand-by in the way of Christmas gifts is fancy work. This is perhaps on account of the wide variety and the moderate cost. It suits the person who has a good deal of spare time, but the mothers, who, like myself, have small children to care for, aside from the regular household duties, have little time to devote to making gifts of this nature. Naturally, we must seek other means of providing gifts for our friends and relatives. The best plan I have known, is to start a gift fund at the beginning of each year, adding small sums from time to time, and it is surprising what a tidy sum will mount up for the next holiday season.

The country woman is necessarily handicapped by distance from stores that carry a wide assortment of things, and this makes Christmas shopping quite a task. However, this burden can be materially lightened if the advertising columns of the magazines and newspapers we read are carefully scanned, for they afford many suggestions for gifts that are inexpensive. For instance, what would please a young man better than a nice leather bill fold with his name lettered in gilt on the inside? Besides being inexpensive, the gift has the added value of utility. The mail order catalogues also abound in many things suitable for gifts and one can get many suggestions by looking through them.

The man who is handy with his saw and hatchet can make many gifts of wood with small expense and a minimum of time. Tabourettes are pretty gifts, while tie racks are easy to make and stencil designs add to their beauty. In fact, there are dozens of similar things that can be made of wood.

What gift would be more pleasing to a boy than a pure-bred pig? It would give the youngster a chance to go in the swine business for himself.

Many things which one would not ordinarily think of as gifts will be appreciatively received. For instance, the owner of a phonograph should be delighted with a gift of new records. In an instance of this kind, however, one should be familiar with the selections the friend already has, to avoid duplicates, or else arrange with the dealer to exchange any records that prove to be duplicates.

Articles of food make delightful gifts for the person in the country to send anybody in town or city. Fresh meats or dressed poultry will prove acceptable, or a box of nice apples will be an attractive gift. Indeed, any number of things along this line would meet with approval, especially this year, when the cost of food is higher than it used to be.. Aside from the above, magazines and good books make splendid gifts, and in the matter of magazines quite a saving can be effected by buying them in a club, it being possible to have magazines in the same club sent to different addresses.

Mrs. M. M. C., McKees Rocks, Pa.—The woman of leisure can easily plan for Christmas gifts, but the busy farm wife has so little time for extras that it is a problem to remember our many friends. For the children something to

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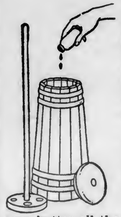

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eat always appeals. By purchasing a set or more of the jelly molds, cakes of various shapes, covered with icing, are a delight. A useful gift is the asbestos table mat, which can be bought at any ten cent store. Crochet a cover with No. 3 or No. 5 crochet cotton. It takes such a little bit of time.

Those who wish to give linen can buy guest towels either by the yard or in the towel make an insertion of colored coronation braid between the towel and the hem by crocheting, catching the braid at the thin part and the insertion will be the width of the thick part of the braid.

For the young lady a bodkin, bolt of lingerie tape either silk or linen, white or colored, all in a ribbon holder, makes a useful gift.

For the one who travels nothing is nicer than the companion outfit consisting of a cake of soap, tooth paste, perfume, talcum powder all in a neat box with a snap lid.

For the business man a loose-leaf note book of memoranda size. For the farmer a subscription to The Practical Farmer or some other good farm paper.

Pillow slips are easily made with a crocheted edge, or embroidered, and are not more expensive than most presents. To those not in the family circle there are such inexpensive booklets with good sentiments. One young lady sent a friend in the country post cards and stamps for them. It was very opportune, as the lady was not able to get to the town to buy them.

To the invalid writing paper and stamps help while away much of their time, as most of them delight to write. Sheet music is an acceptable present to the one who is musically inclined. Be careful that the selection is good music, and not "jazz."

Since yarn is used so much in embroidering, one can accomplish much in such a short time. Flowers and motifs can be worked on laundry bags, sewing aprons, mending bags and children's dresses.

For the mother pretty gingham made into aprons with cross stitch in plain or elaborate figures will be very acceptable. A holder for napkins is made of linene or colored material 24 inches long and 8 inches wide. The two pieces of above length are bound around the edge with tape, feather-stitched either in white or colored cotton crochet. These are placed one on top of the other, making an even shaped cross. Pasteboard can be placed between them to make the foundation. The initials can be embroidered on the above.

Homespun Yarn from Ithaca

Keeping cereals and flours in mouse-proof, bug-proof containers is good thrift insurance.

The high price of cooking fats gets a slight jolt if all pieces of fats from meat are saved and clarified for use.

A good habit to cultivate is that of having a pan in the warming oven in which odd scraps of bread may be put and dried for future use as bread crumbs.

It is a wise woman who saves the water from cooked rice, macaroni or vegetables and uses it in soups or sauces, thereby adding to the nourishment of her family and to the fatness of her purse.

It is possible to make a little meat go a long way by combining it with bread dressing, macaroni, rice, dumplings or potatoes; and the cheaper cuts of meat are as good to use in this way.

The man whose wife knows how to work over into appetizing dishes the smallest scraps of food left from meals has just cause to be thankful in these days of high-priced foodstuffs.

The A. B. C. of household arrangement: Place the necessary furniture within a given space in a way that will be reasonable for use and pleasant to see.

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER V—Continued

Mary was "spoiling" for a fight, an honest exchange of loud words and rough recrimination, to avenge the uncomprehended hurts of the past hour. Her brave philosophy about ladies and working girls had collapsed at this first serious test, leaving only its phrase on her lips; she was passionately as good as any one. A genuine "row" would have brought her out relieved and sweetened, made good again. But Marise could only retreat into cool fastnesses far above the reach of angry missiles.

"I should be glad if you had their simplicity and modesty, Mary," she said, after a grave weighing of words.

"Modesty nothing! They pretend modesty, but don't they think they're it!" Mary flung back. "And all the time they haven't got anything that I haven't got. You get just as good an education in the grammar and the high as you do in their fancy kind of school. A poor child can have the same advantages as the richest in the land—I can go to the theater and concerts and the Museum just as much as they can. Everything is open to everybody nowadays. I haven't got French manners and I don't want them. I'm perfectly satisfied to be the way I am." She turned tempestuously to the door, but paused there to hurl a final shot. "And I've seen girls in those Annette Kellermanns, and mama and I, we don't think they're decent!" Then she was gone, with a bang of her door to cut the possibility of further communication.

Marise wrote no letters. Hannah, coming in half an hour later with a fresh birthday offering, found her sitting as Mary had left her, her head drooped forward and the pen lying under her limp fingers. What Mary had missed had never been so brutally plain as since this loud assertion that she had missed nothing. Her mother lifted sad eyes.

"A girl has so much to learn, Hannah," she said. "And if she has not been taught a little of it every day, how can she ever catch up?"

Hannah's face showed a grim satisfaction. "She can't, m'am! Let her grow up in common ways, and common she'll be to the end." She would have expanded her timely warning but Mrs. Jaffrey abruptly changed the subject.

More birthday flowers came, and friends ran in or telephoned. How dear and good they were! After sixteen years, her world was still saying, "I'm sorry!" Mary did not reappear until Hannah knocked on her door to announce luncheon; then she came out in hat and coat.

"I guess I'll go up and lunch with mama." She had planted herself at the dining-room door with an air of giving Marise a fair chance to fight that out if she cared to. Her mother seemed to be looking at her from a long way off. She said nothing, and after a due pause, Mary tightened the chip on her shoulder and went.

The problem was growing too difficult to be met alone. Marise came to that decision with a relieved rush of the spirit, a sense of turning home after heavy journeying. She had not admitted before how she longed to tell Hugh. He could help her. Impatient and trying though he often was, he had a fundamental wisdom for serious crises. And even if he could not make it much easier, telling him would be such a comfort. His gladness for her would make any feeling on his own account impossible. Dear Hugh! The sense of his devotion encompassed her all the afternoon as she waited for the tea hour to bring him. Hugh never forgot her birthday. That he had not sent a morning offering could mean only that he was coming himself in the afternoon.

When the afternoon did not bring him, Marise decided that he must be out of town, and waited anxiously for the evening. The momentary relief was gone. Between listening for Hugh and watching for Mary, she passed strained and miserable hours. The old, "I must not!" of her long patience had lost its efficacy, and she was weary of self-discipline. She wanted Hugh, and she wanted her baby, and no one came!

Mary did not reappear until after nine, and her entrance betrayed a guilty conscience. She tried to make it nonchalant, with a casual apology for not having realized the hour, but her eyes begged pardon in spite of her, and her pale harrassed young face revealed that it had not been altogether a happy time. Marise suddenly began all over again with her, wiping out the difficult day with a welcoming smile.

"Come in and sit down a few minutes, Mary, if you are not too tired," she said, so pleasantly, that Mary, braced for trouble, was left with no attitude ready. She came slowly to the couch and for the first time sat down beside her mother. Marise was as careful not to alarm her as a lover might have been. She showed her some new books, and Mary, though she looked at them with unseeing eyes, was gentle and grateful. Presently Marise tried a bolder advance. Taking out a drawer from the table she laid it on a chair before them.

"Do you want to see your forebears and relatives?" she asked.

The drawer was full of old photographs, done in the days when a cabinet likeness of one's self was a suitable, even a necessary, holiday gift. They showed buckram sleeves, and bustles, and even chignons with a drooping curl and a black velvet neck band. Among them were photographs taken from dignified family portraits, and daguerreotypes of meek-haired little girls with bare shoulders, and of rosy, beautiful young men in black stocks. It was a good solid race to have sprung from, and, telling of family traits and peculiarities, Marise had her first happy hour with her child. Mary could listen, after all. She laughed aloud over Great Uncle Ralph, who washed his priceless china with his own hands after a banquet, while three sleepy footmen stood about with dish towels; and Cousin Lucy, who was so afraid of fire that she slept with her valuables ranged around her in portable packages. There was one picture of a very young and lovely face, on which nothing had yet been written, looking happily out of a wedding veil, and then the same face only a year older, yet already remolded by difficult experience, pressed against the fuzzy head of a new baby.

"There you are," said Marise, caressing the baby with a light finger. "You behaved very badly when that was taken, Mary. In fact, you always did misbehave at the photographer's. You seemed to think that the camera took a personal liberty."

Mary had a downcast smile for that. "I do still, she admitted. "My pictures always look like I wanted to bite nails." She sighed. "I guess I'm not a very nice person, Mrs. Jaffrey. I've been ashamed all day of the way I spoke to you. I want to ask your pardon."

The honorable amend was so unexpected that Marise's eyes filled.

"I understand, dear! It is a hard situation—hard on all of us. We can only—do our best."

She offered her hand, and Mary shook it, then abruptly rose and marched off to bed. Marise kissed the baby in the picture and put it away, deeply comforted.

Morning brought no belated greeting from Hugh. It is difficult to ask even the closest friend why he has forgotten one's birthday, but by mid-afternoon Marise had imagined Hugh into a serious illness, and she called up his office. She was promptly put into communication with his own voice—but not the voice to which Marise was accustomed.

"Hugh, it is Marise," she insisted.

"Yes. How do you do?" was the cool answer.

Undoubtedly there was a client close at hand, hampering his speech. Marise hurried on.

"Hugh—I won't keep you a moment—but I want so much to see you. I have something to tell you."

"I'm sorry, but I am going out tonight. I have a dinner." He did not sound in the least sorry. It must be a very important client.

"Yes; and we are going to the theater. But I thought, if you had any time this afternoon—Hugh, I know there is some one there and I am interrupting you frightfully—"

"There is no one here. I am quite alone," said Hugh stiffly.

Marise was bewilderedly still for a moment, trying to understand. She was totally unaware how in the intense preoccupation of the week before she had seemingly snubbed Hugh, refusing to speak to him, ignoring his apology and his offering. All she realized was that the solid earth under her feet was reeling.

"You couldn't come up—for a few moments—this afternoon?" she finally asked with a troubled hesitation that would usually have brought him on the instant.

"I'm sorry," he repeated. "I am up to my neck in work today. I don't think I can manage it." There was another stricken silence, but he offered no help.

"Well—good-by," said Marise faintly. It was a last chance, but he let it go with cruel indifference.

"Good-by," he said, and hung up with the word.

"Hughie!" stammered Marise. This was far worse than the Franzen Quartette. All the rest of the day she was explaining it to herself and trying to accept the bitter truth. Hugh was growing tired of giving so much and getting back so little. A man considered a woman's summons an honor only when he was in love with her; when he had got over that, of course it was merely a bore. Hugh had given her more than any woman ought to expect, and he had every right to withdraw. No doubt he had found a woman who dared give back what he gave, and in the light of her generosity he saw at last how meager Marise's return had been. He was done with her. He did not even want to hear about Mary.

Mary was spared allusions that night, and there were no subtle attacks on her feelings. They dined almost in silence, and were in the cab on the way to the theater before Marise could rouse herself to the present moment. Then, turning her head to look at the young presence beside her she was ashamed.

"My own daughter is sitting here with me, and I am thinking of some one else," she reproached herself.

Mary's eyes were fixed on the rushing traffic and the streaming lights of Broadway. She had seen them often enough, but not from the angle of a taxicab window, and surely she must be thinking about the possible change in her lot, feeling a little of the temptation of what to her would be wealth. Marise did not care how mixed the motives might be that brought her child to her. Mary had a big, warm, fighting heart, and time would show her mother the way in. She intended to offer every possible temptation, and not all for her own sake. Her child had a right to that station in life into which she had been born, she had a right to the great privilege of shelter and ease. Marise could daily leave her shelter to brave the dirt and sights and

smell of the open world, but the shrinking that she controlled never grew less, and her spirit always flew home like a released arrow. The little allures of wealth were only the bait to catch this wary daughter; what she wanted to give her was beauty and grace in her private life. These things were so supremely precious to Marise that she could not question their general value. When they were not wanted, it was because they were not known.

The bait did not seem to be very effectual. Private cars, carrying women in brilliant evening clothes to the opera, were halted close beside them, offering little shadowy views of high life, but Mary looked them over with an undazzled scrutiny.

"Mama and I went to the opera once," she announced. "We didn't see anything in it. Gee, but we were bored! We could look down on the ladies in the boxes, and they were just as bored as we were. There was a sort of dark scene outside a church, and a man and a woman, they went on and on and on till I thought I'd die. Lawsy! Call that a good time! At last I says to mama, 'Do you know why I like the top gallery better than the finest seat down there in the middle of the orchestra?' She bit all right. 'Because you're a sensible girl, content with what you have,' she says. 'Stung! Because we can get out easier,' I says. She laughed out loud, and the next time it let up, we skipped. Never again." The very memory could make Mary sigh with weariness. "People just go because it's swell. You needn't tell me they enjoy it," she concluded.

Marise had found yearly rest and renewal in the Wagnerian surges and the Puccinian rivulets, but it scarcely seemed worth while to say so. Mary's decisions had an appalling finality, and besides, they were stopping at the theater. She let it go, then decided that both her silence and her irritation were weakness, and went back to take it up.

"Mary, you are a dogmatic young person," she said with determined good humor. "I love opera, myself, and get a great deal out of it. You don't know what you are talking about."

That was evidently the way to argue with Mary. Her broad smile was disarming.

"Well, maybe I don't," she said. But I know what it did to mama and I. We went and had fried oysters and a horse's neck, to get over it."

She jumped down from the cab and turned to put a hand under her mother's arm. Marise, sure-footed as a girl herself, stepped down uncertainly, that she might lean on the young strength. Things were undeniably better between them today. That hour over the family photographs seemed to have taken out some of the bitterness.

It was her first public appearance with her child, and Marise, nodding to friends in the lobby and from the aisle, felt the thrill of the situation. If they could know. Their welcome and excitement must sweep Mary into the place that awaited her; and even Hugh would come back, at least temporarily, when he heard the news. Marise conceived a punishing desire that he should hear it from some one else. Had she dared, she would have gone up to friends then and there: "This is my daughter Mary. Yes, we have found her!" She could not do it without Mary's consent, but the idea of demanding consent, of throwing off this patience and wisdom and taking the upper hand, tempted her sorely. And fate seemed to be indicating that course, for, when they were settled in their seats, she found an elderly second cousin on the other side of Mary. Cousin Sherman had been very good to her always, and it would be well to tell him first. As she leaned across Mary, a sense of coming action shortened her breath and turned her blue eyes black.

"Marise, you are a wonder;" he kept her hand a moment to pat it. He was a handsome old man, white haired and rosy, with a delicately forceful beak above a chin that could still go clean shaven. His eyes had a subdued twinkle for ladies, as though he knew a thing or two about them, and no posturing on their part could lead him astray, but for Marise they always softened. "A wonder," he repeated. "In my day, people changed every few years, grew a little fatter or a little redder or browner or something; but I can't see that you ever change a line. I don't see how your women friends stand it!"

Marise answered with deliberate purpose. "Perhaps, when one's mind is in suspense, one's body stays in suspense, too. You see, Cousin Sherman, all these years I have been holding back—waiting. Perhaps I shall be like the mummies, that look perfectly preserved until they get a breath of air—and then crumble into dust."

"Then God keep the air away from you, my dear!"

"Oh, no. I will take my chance." Marise smiled deeply, meaningly. "I want you to meet Mary Healy."

He shook Mary's hand, looking at her with arrested attention. The orchestra was playing for the rising of the curtain, and the air seemed to throb with suspense. If he should guess—if he would only guess and take the issue out of their hands!

"Miss Healy has a look of your Aunt Ellen," he said. "Have you noticed it, Marise? You needn't mind, Miss Healy—she was a very handsome woman. I dare say it is a strain of the same blood, if your name tells the truth."

For the first time Mary admitted—very faintly and guardedly—the romance of the situation. A furtive, reluctant half smile in the direction of her mother acknowledged the joke of their secret.

"Miss Healy has Irish blood, just as I have," said Marise.

"We are all better for a little of it." Then the curtain rose, and he turned to the stage, changing to another pair of eye-glasses. "Ah, now we're going to have a good time," he said confidently to the girl.

Cousin Sherman might see through the ways of ladies, but he could not be placed near one without trying to make her like him. He gave Mary a very good time, sharing his amusement with her, whispering an occasional comment that brought out her warm little gurgle of a laugh. She evidently liked him enormously. Between his attention and the joy of the play, she had forgotten her troubles. Her face as the curtain fell was beaming.

"Shall I venture it? Shall I simply announce to her that I am going to tell?" Marise hung over the decision, then made a bold advance. "Mary!" The girl turned. "Suppose we tell Cousin Sherman! He would be so—My dear, what is it?"

Mary attempted no answer. Her glance had been drawn past her mother to the extreme end of the balcony overhead, and had fixed there, as though she saw something too poignantly sad for human bearing. The color had left her face and her body had grown rigid with the shock. Marise lifted her theatre glasses and behind their shelter stole a glance overhead. Isolated in the two end seats were a young man and a very large, middle-aged woman.

They might not have been together, for they were not speaking. The young man sat with dropped head, so that only a bush of dark hair was visible, but the woman had folded her powerful arms across her chest and was looking down over them at Mary Healy. She might have been a monumental figure of Grief, stern grief that breaks but does not bend. If she saw that the girl had looked up, she gave no sign.

Marise had not for years felt such a surge of anger. In shutting away emotion as much as possible, she had nearly eliminated wrath, but now it came back with overwhelming force, as though it, too, had merely been held in suspense. Hot words surged through her like a physical torrent. She could have stood up there and cried out on Mrs. Healy for her cruelty and selfishness. The woman did not even play fair—sitting over them like the ghost at the banquet, working on the girl's loyal heart and spoiling the one happy care-free hour she had had! It was abominable, it was vulgar! Marise had no worse word than that. In the brief intermission she could not recover the power of quiet speech, and Mary sat frozen beside her, sunk guiltily down, making no effort. Cousin Sherman's attention had been claimed by a friend just behind.

The second act dragged past. The house laughed and applauded, but there were certainly three people, perhaps four, who saw nothing of it. In the dimness Marise stole several glances at the young man in the balcony, wretchedly facing a new complication, but if he were with Mrs. Healy, there was nothing to show it. They did not speak.

At the next curtain, Cousin Sherman rose.

"Wait till you are old, Miss Healy, he warned her. "Then you will have to mind your bedtime, just as you did when you were little. That is why they call it second childhood. Good night, Marise. Find out how this girl got your Aunt Ellen's brow and eyes."

He did not suspect, of course, and this was not the time to tell. When he had gone, Marise kept up a show of conversation for Mrs. Healy's benefit, but neither she nor the girl sitting so reluctantly beside her knew what she said. In the middle of the last act, she felt a relaxing of the tension, and knew before she glanced up that Mrs. Healy had gone. The young man's place also was empty.

(To be continued)

"Good Bye, Old Bess."

There's no use in talking, Ann,
I've got to sell "Old Bess"
If I expect to do some biz
And get there with the rest.
I'll be out to meet you smile;
But a load went by in a buzz machine
And had me beat a mile.

When I drove up to Johnson's store
He said, "Si Brown, you're late;
I took the other fellow's stuff,
I had no time to wait.
The world is moving quicker now,
I'll give you just a tip;
Trade your horse for a flying machine,
And make a faster trip."

But somehow, Ann, I cannot sell
Old Bess, so good and true.
She brought me down to clover dell
When I came courting you.
We'll keep her here with us, dear wife,
Let foolish people fly;
She's earned with us a peaceful life
Until we say "Good-bye."

Alfred Wheaton Sweet in Farm Poems.

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Five hundred thousand dollars has been offered for the Dempsey-Carpentier fight.

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Farm Happenings

AS TOLD BY THE BOSS.

The breeding cows came into winter quarters in better shape this fall than any time in recent years. They will be wintered on corn silage, some oat straw or corn stover and a small allowance of cottonseed meal.

The breeding ewes have all been brought into winter quarters. They will be housed in an old barn that will be dry and keep out the draft. Sheep do not require a warm place, but must be kept dry and out of the draft.

We recently secured a new herd boar to take the place of one that we have used for two years. The purchased boar is bred along the same line as the one previously used.

The first of the silos has just been opened. The corn put into this silo was frosted and pretty dry when put in. We put on plenty of water and the material is coming out in good shape.

The fall pigs have been doing exceptionally well. They all farrowed early and secured a good start during the warm weather.

The brood sows have all been bred so that they will farrow during the month of March. This makes a convenient time to have the pigs come, and they will all have a good start before they are put on forage in summer.

The heifers that are to be retained in the breeding herd have all been separated from the mature cows and will be given a little extra care in order to develop them properly. A little extra feed for young growing stuff seems to pay well.

The time of the year for putting up the supply of cured meat is at hand. The hogs that are slaughtered are kept off feed the evening before they are butchered. This is done in order that the pork may be put up to the very best advantage. We also make it a point to see that the carcass is well cooled as rapidly as possible.

We plan to feed as much of the live stock as possible on silage. The breeding ewes will be fed from 2 to 3 pounds per head daily. The feeding cattle will receive a generous allowance and the breeding cows will have to be satisfied with a generous allowance of silage and a small amount of corn stover and cottonseed meal.

All the fall pigs will be double treated against cholera some time during the next six weeks. We make a practice of treating all our hogs against cholera and believe that it pays even though quite an expense at the time the work is done.

Beef breeding cows can be economically maintained and will come through the winter in good condition if fed all the corn silage they will consume along with a pound of cotton seed meal per head daily.

Most of the things put off till tomorrow should have been done yesterday. A careful planning of work this winter will enable you next spring to do today's job today.

Five Remarkable Year's Jersey Records

With the completion of her fifth official year's record Duke's Rachael Interested 282540, has proved beyond doubt that she is a persistent producer. She was first started on Register of Merit test at two years and seven months of age; her last record was completed at the age of eight years and five months. During this time she has dropped five calves, and is safely in calf again.

The first four of her records are Class AA; had she been bred about a month earlier during her last test she would have qualified for five AA records. As it is, she carried her calf about four months of her last record.

Duke's Rachel Interested's production by years:

Milk, lbs.	Fat, lbs.	Age Yrs.	Age Mos.	Class
8,937.8	482.26	2	7	AA
8,029.0	415.05	3	9	AA
12,254.0	672.63	5	0	AA
11,365.9	621.34	6	2	AA
13,175.4	729.99	7	5	A

"Duke's Rachel Interested." Read her Wonderful five years' Records on this page

In her five records she has averaged 10,752.4 pounds milk, 584.25 pounds fat. She was sired by Interested Prince 58224, which has fifteen sons and forty-seven Register of Merit daughters, which have completed 75 year's tests, including Passport 219742, the champion milk producer of the Jersey breed with a record of 19,694.8 pounds milk and 839.26 pounds fat at 7 years and 11 months of age. He himself is a show animal, having won first prize as a yearling at the Pan-American Exposition in 1901, and later won first at New England for get of sire. His sire is a half-brother to Financial King, the sire of Financial Countess, the former world's champion Jersey.

Her dam, The Duke's Girlie Rachel 170850, has two Register of Merit records and two daughters in the Register of Merit. The maternal grandsire, Theda's Duke of Portage 41762, has 11 daughters in the Register of Merit, while the maternal grandam, Girlie's Rachel 122811, has three daughters.

That Duke's Rachel Interested has inherited all the qualifications of her ancestors is without question. Her picture, reproduced herewith, shows her to be a very typy animal, with every mark of a heavy producer. She was bred by Rufus A. Sibley, Spencer, Mass., the founder of the Owl-Interest family. She is owned and was tested by Ayer & McKinney, Meridale Farms, Meredith, N. Y.

The Red Cross as the Farmer's Friend

More than one-fourth of the Red Cross nurses in the United States are now working in agricultural districts. Fifteen thousand communities are already lined up for the new campaign of the American Red Cross, public health service. Every week sees new classes formed, all over the nation, in home nursing, first aid, dietetics, home and community hygiene, and other phases of Red Cross activity for the prevention of disease and promotion of health.

WHAT DOES THIS MEAN TO THE FARMER?

It means that the American Red Cross has put at the disposal of every citizen in the United States its vast resources at home and unparalleled experience in relief work abroad, to the end that we may learn all that modern science can teach us about the art of keeping well.

We are not a healthy nation. Statistics prove that one baby in every eight dies before reaching its first birthday; that more than 23,000 mothers are sacrificed annually in child birth—a larger death toll than that from any disease except tuberculosis; one-eighth of our population is cut off in the prime of life every year by the great white plague; in 1919 750,000 persons died of diseases that could have been prevented if taken in time; 100,000 were killed by accidents and 500,000 so badly injured that they can never earn their living again. Such a record is inexcusable in a civilized and intelligent nation.

WHAT IS GOING TO BE DONE ABOUT IT?

The American Red Cross offers the most practical solution. It possesses already, through its nation-wide network of chapters and branches, the means for bringing such health education facilities as Red Cross health centers and teaching centers to every man, woman and child in the Uinted States. Hitherto it has been usually the city that benefited most by any organized campaign for public welfare, because the city already contained much of the material for making a beginning, but, thanks to Red Cross nurses and the staff of dietitians and instructors specially trained for such work, the country will benefit just as extensively from the Red Cross public health program as the more thickly populated sections.

Now, if the farmer's wife wishes to learn the most modern method of keeping house, cooking meals and providing the baby's food and bath, she can go to the Red Cross health center nearest her farm and obtain full information. The public health nurse will make friendly visits to every household in her circuit, so that every expectant mother may be surrounded with every safeguard for herself and child. When epidemics strike the community, or flood or fire menaces the countryside, the Red Cross, through its volunteers, trained in home nursing, or its committees prepared for disaster relief, will rush to the scene in time to prevent widespread calamity. This is how the greatest mother in the world plans to make America a safe and healthful place for everybody.

Queries Answered

Ropy Milk.—W. G. M., Jr., Portsmouth, Va., writes: "I have a cow, part Jersey, that calved in May last, and for some time gave about three gallons of very good milk; now she gives less than two gallons and the milk has a strong and offensive odor and nauseating taste, especially when heated. The cow is fed on dairy food, hay and beet pulp and the little grazing she can get in a small lot, and she appears to be in good condition. When strained through a cloth the milk leaves stringy and curdy masses. Can you tell me the cause of this condition of the milk and the remedy, if there be one, and if the milk is fit to use in its present condition?"

From the description given, it seems that the trouble with this cow is ropy milk. There are two general causes of this trouble. It may be caused by an inflammation of the udder or through a prolonged lactation period. It may also be caused by a distinct bacillus viscosis. In this case it is not likely that the trouble is caused by prolonged lactation, as the cow has only been milking since May of this year.

About the only way to stop the trouble is to dry up the cow. It frequently happens that the trouble is found in only one quarter. When such is the case, it is possible to dry up the one quarter and keep milking the other quarters. If the trouble has existed for some time it is quite likely that there is infection throughout the udder. We would suggest that each quarter be milked separate and the milk examined. If the milk from any of the quarters is in good shape, continue milking these and dry up the infected quarters. If the infection is general, dry up all quarters and the trouble will likely disappear before the cow freshens again. W. H. T.

Farm and Home Facts from New Brunswick, N. J.

Did you ever stop to think how much more impressive "Locust View Farm, William Jones, Prop." might sound to a possible patron, than "Bill Jones' place down by the river?" Printed letterheads aren't such an expensive proposition, either.

The silo question, like prohibition, is a dead issue. No progressive dairy farmer can afford to be without at least one such cannery for his forage.

Men do not gather figs from thistles, nor will the 40-egg hen produce a 200-egg daughter. Consider that before you decide that picking breeders is going to take too much time.

Before scrapping that old machinery this fall, look it over for bolts and braces that might come in handy some time.

The Question of Feeds

(Concluded from page 341)

feeds, such as glutens or some of the oil meals, or bran or middlings, the whole sweetened with molasses, but the careful farmer feeder will remember that the mixed feeds of commerce, as a rule, have for their base and bulk such outcasts of the mills as cannot be sold on the market to discriminating users without their identities being hidden in mixtures, sugar-coated to appeal to the sweet tooth of the cow or horse.

I have dwelt somewhat upon this character of feeds, not to hurt the business of their makers and sellers, nor to discount the artistic talents of the writers of their advertisements, but as a caution to the innocent buyer who is often misled into buying stuffs of low feeding value at relatively high prices, and that may, in addition, be dangerous to the health of his animals and carry weed pollution to his land.

Primarily, legitimate animal husbandry means feeding our animals from the products of our own acres, but when it happens, as in the noted case of oats, that this or other grains are worth more to the miller than they are to the producer-feeder, it becomes perfectly legitimate to sell the grain and replace it with some of the dependable mill by-products. These bought feeds, of course, bring with them some of the hand fertility of the man who grew them, so that by profitably feeding them to our animals and giving the resulting manure proper care until it reaches our land we have a desirable by-product from the purchase. Economically, however, the careful farm feeder will use his acres, not devoted to the production of money crops, to the growing of such valuable feeds as have no primary market value, such as pastures and the forage crops that may be cured for winter feeding.

Such a course of farm management will contemplate the intelligent and systematic improvement and care of pastures, building of silos for the storing of our greatest crop, corn, and growing clover, alfalfa and other legumes that may be given places on the farm profitably. For horse, swine and poultry feeding the corn will have to be cured and husked and the fodder carefully handled and stored for the cattle needing it.

After such provisions have been made for farm feeds, the needs and markets of the feeder intelligently considered must determine what purchases he can most economically make to supplement the feeds he has grown. In most cases these purchases will be to secure the protein that is probably lacking in his grown feeds. This especially in considering the feeding of bovine animals. Which of such feeds may be most economically bought will depend upon market prices, but, as a rule, they will be good cotton seed meal, linseed oil meal, the genuine gluten and wheat bran. For swine, with corn as a base, wheat middlings, linseed oil meal and tankage, which feeds should not be depended upon for a complete ration if the feeder expects to come out with a profit, but be used to supplement plenty of corn and all available unsalable vegetables, such as pumpkins, turnips and small potatoes. These latter, with any available skimmilk, should be shared also with the good hens, that have corn, wheat, oats, meat scraps, bran, and anything, almost, they will eat to bring forth dollar eggs. *Pennsylvania.*

[*In an early issue Mr. McSparran will continue, in another article, his discussion of the feed question.*—ED.]

Feed Value of Skimmilk

Farmers who are wondering what is the feeding value of skimmilk will be interested in the rules which are approved by the animal husbandry men at the New York State College of Agriculture at Ithaca. One rule, known as Gurler's, is that a hundred pounds of skimmilk are worth, for making pork, one-half the price of a bushel of corn.

Hoard's rule, however, is better, think the college workers. It is: When fed alone, the value of a hundred pounds of skimmilk equals the market price of live hogs, in cents per pound, multiplied by five. If fed in combination with corn or barley, it is worth the price multiplied by six instead of five. The following example shows how the rule works: If hogs are worth 14 cents per pound, a hundred pounds of skimmilk would be worth for feeding 14 times 5, or 70 cents, if fed alone. If fed with corn or barley, as it usually is, it would be worth 84 cents.

A limited amount of skimmilk for feeding small pigs or brood sows is worth much more to the hundred pounds. The larger the percentage that milk makes of the total feed, and the older the hogs, the less the milk is worth. The above rule is for pork production in general.

Pig Weighs 308 Pounds at 208 Days

An unusual incident of rapid growth and fattening of a pig is reported by the Ohio Experiment Station.

One pig used in experimental work weighed 3.7 pounds at birth; at the time the test was completed the pig was 6 months and 24 days of age and weighed 308 pounds, making an average daily gain of 1.46 pounds.

At the weight of 87 pounds the pig was started on a 105-day feeding test in which it gained 2.1 pounds daily.

Besides rape pasture, the feed consisted of corn 14 parts and tankage 1 part, by weight, when the test was begun; when the pig reached a weight of 125 pounds a ration of corn 19 parts, tankage 1 part, was fed.

Feed Dry Cows Well

It is false economy to keep a good cow on dry corn fodder, just because she is dry, and will not freshen for a few weeks, say specialists from the department of dairy husbandry of the New Jersey State Agricultural College.

Proper feeding during the time a cow is dry will have a great effect on her milk flow during the following lactation period. When a cow is carrying a calf and is producing a large quantity of milk, she is under such a tremendous strain, that during her rest period she must be fed a ration that will allow her to build her body as well as nourish the calf.

Some cows have a tendency to milk nearly up to the date of freshening, and it is often a belief that they cannot be dried off for a sufficient rest period. Expert herdsmen, however, find that no injury results from drying up a cow which gives as much as 5 to 8 quarts daily, if one milking a day is omitted for several days and the animal then partly milked out after skipping an entire day.

Equal parts by weight of hominy, oil meal, bran and ground oats make a good ration for a dry cow. The cow should receive enough of this ration to keep her constantly gaining in flesh until calving time. Just before she freshens it may be necessary to feed oil meal and bran only. If the udder shows inflammation, feed bran alone for a week before calving time.

What to Do With the Hides

Apparently it doesn't pay the farmer to tan his own leather. The Bureau of Chemistry, United States Department of Agriculture, is conducting leather-making experiments upon the scale to which the average farmer would have to adjust his work, and specialists say that the results obtained thus far do not warrant general practice. Good leather can be made in individual tanneries, but the results are too uncertain to give reliable profits.

The work was taken up by the department when it became evident that the farmers were feeling the injustice of a transaction wherein they sold a whole cowhide for less than they paid out for a pair of work shoes—an occurrence not at all unusual. Investigation shows that the leather dealer is not entirely to blame for the low prices that the farmer receives for his hides. Too often the hide from the farm cow is taken off in a careless manner and leaves the skin full of cuts and holes—farm hides are never as uniform as those bought from the packing houses, where the animals are carefully graded and the skins removed by expert skinners. For that reason the hide buyer is always willing to pay more for the packer's product than he can offer to the farmer.

Then, too, the farmer sells his cowhide to the junk dealer, who deducts his profit from the price he pays. Whenever it is possible to collect a number of hides and skins it will pay the owner to deal directly with a large dealer, the specialists say.

Bill Parsons of Mt. Pleasant, Idaho, has a horse and he don't know whether to trade him, kill him or buy him an ear trumpt. The horse is a fine looking animal and he *can* travel—*but*—.

The other day Archie Carson, the mail carrier on R. F. D. No. 1, passed Bill on his out trip and Bill's horse was standing stock still in the road. As Archie swung back to town again, he passed Bill and the horse was standing still in the road. As Archie drove home to dinner he passed Bill on the edge of town again and stopped.

"Is that horse sick, Bill?" asked Archie.

"Not that I know of," answered Bill. "I ain't noticed no symptoms."

"Does he balk?" continued Archie.

"No, he don't balk. But he's so darn afraid I'll say 'whoa' and he won't hear me, that he stops every once in a while to listen."

Success is just another way of saying, doing the job whether you feel like it or not.

Your Private Cow Doctor

If cows could tell their feelings, many a serious illness would be prevented, and constant milk losses would be saved.

Milking cows, particularly, are subject to many ailments that are first manifested only in a reduced milk yield.

Such cow ills you can treat yourself with the aid of Kow-Kare, the great cow medicine. At the first sign of reduced milk flow try Kow-Kare. Use it according to directions and watch the story the milk pail tells.

Dairymen everywhere know the value of Kow-Kare both in preventing disease, and in treating such ailments as Barrenness, Abortion, Retained Afterbirth, Scouring, Lost Appetite, Bunches.

No cow barn should be without Kow-Kare, your private cow doctor. Sold in 70c and $1.40 packages by feed dealers, general stores and druggists.

Write for free book, "The Home Cow Doctor."

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Every experiment station and every big breeder has proven this.
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Make Yourself a Christmas Gift of a pair of my Berkshires and be merry ever after. Will take Liberty Bond at par. W. F. McSparran, Furniss, Pa.

I WILL prescribe, furnishing medicine, for any abnormality known to Veterinary Science, for the sum of $1.50. Write, stating symptoms as you see them. Dr. Crosby Kelly, Veterinarian, 1151 New Jersey Avenue, N. W., Washington, D. C.

When Shall I Buy Steers and What Shall I Feed Them?

Sim Baxter's right leg was in temporary retirement under a layer of arnica-soaked bandages. He regarded the injured member with a glint of rueful humor and spake thus to a neighbor who had dropped in for a chat with the cheerful invalid.

"Bert, tell me somethin'. How can a feller tell when a mean white mule named Anarchy is goin' to kick? I mean, how can he tell in time to do him any good?"

"Human knowledge goes no further than to say that a white mule is *always* goin' to kick. Is that the answer? Then let me ask you a question: How do you know whether to buy your 'feeder' steers in the fall or in the spring? Do you make anything by feeding them in the winter, and will you make more if you let the other feller feed 'em through? They cost more in the spring than in the fall. Is there any way to be certain?"

Sim admitted that the thing was past his comprehension and confessed that he sometimes did the thing one way and sometimes the other, but that he never knew just how he was coming out.

NO HARD AND FAST RULE.

In reality, as to the time to buy stockers or feeders, there is no hard and fast rule. The usual time is in the fall when they must leave the grazing areas and go where feeds have been harvested or stored for cattle feeding. In the spring when everyone with grass for grazing wants them, cattle are higher than in the fall, usually enough higher to pay for the wintering. However, with a falling market, which no one can foretell with any degree of tainty, the cattle may not be worth ough more in the spring to pay for winter feeding. Yet they have been t largely on feed for which there is other market.

Consequently, what Sim and his ighbor should know is how much it sts to keep stockers through the win- on various rations, how they lose or in weight, and how they gain rough the summer as a result of the ay they have been wintered. Being in a better position to carry on feeding experiments to answer these questions than the cattlemen, the Bureau of Animal Industry, co-operating with the West Virginia Experiment Station, conducted a series of feeding tests in Greenbrier Co., West Virginia. The experiments began December 22, 1914, and covered a period of four years, the results being now published in Department Bulletin 870.

DETAILS OF THE TESTS.

In brief, 30 yearling steers were selected each year and divided into 3 lots of 10 steers each. When the lots were carefully equalized, the average weight of the animals was 663 pounds each. The steers were on winter rations an average of 130 days, and on pasture an average of 158 days each year.

The tests proved that an average daily ration of 19.8 pounds of silage, 5 pounds of mixed hay, and 2.5 pounds of wheat straw during the winter would maintain these steers without loss of weight.

An average daily ration of 23.1 pounds of corn silage, 4.9 pounds of wheat straw and 1 pound of cottonseed meal would give each steer an average gain of 62 pounds.

A daily ration of 11.9 pounds of mixed hay and 4.1 pounds of wheat straw fed throughout the winter will not keep the animal in good condition. This ration was responsible for a loss of 35 pounds per steer. Corn silage gave better results than dry roughage alone, and the steers that had silage as a part of their winter ration made greater total gains than those fed on hay and straw. The cost of feed averaged throughout the four years was as follows:

Corn silage	$ 6.00
Mixed hay	18.00
Rye hay	18.00
Soy bean hay	17.00
Wheat straw	7.00
Cottonseed meal	50.00

The bulletin gives an interesting summary of costs and gains:

General Summary of Costs and Gains

Items	Lots 1, (corn silage mixed hay, and wheat straw)	Lots 2, (corn silage wheat straw, and cotton seed meal)	Lots 3, (mixed hay and wheat straw)	Lots 4, (corn silage and soybean hay)	Lots 5, (corn silage, rye hay, and cotton-seed meal)
Average cost of wintering	$14.49	$14.32	$15.67	$14.76	$16.82
Average length of winter periods days	128	129¼	129¼	133	133
Cost of feed per day, winter	$0.116	$0.111	$0.121	$0.111	$0.127
Average cost of summer feed	$8.20	$7.90	$7.90	$7.00	$7.00
Average length of summer periods days	164	158	158	140	140
Cost per day, summer	$0.05	$0.05	$0.05	$0.05	$0.05
Average of total costs per year	$22.60	$22.22	$23.57	$21.76	$23.82
Average gain or loss per steer, winter, pounds	Minus 1	Plus 62	Minus 35	Plus 27	Plus 11
Average gain per steer, summer pounds	317	262	309	240	281
Average total gain per steer, pounds	316	324	274	267	292
Cost per pound yearly gain	$0.072	$0.069	$0.086	$0.081	$0.081

It will be noted that the lot of steers fed on a winter ration of corn silage, wheat straw and cottonseed meal made the greatest gains and that this ration was also the cheapest.

The bulletin records feeding tests that will be extremely valuable to the farmers of Pennsylvania, Ohio, West Virginia, Virginia, Kentucky, North Carolina, Tennessee, and the adjacent states, and for them, it does much to answer the question that puzzled Sim and his friends. The bulletin may be had on application to the United States Dept. of Agriculture, Washington, D. C.

Condensing the Orchard

C. A. EMERY.

Years ago when our orchard was set out we planted two and sometimes more trees of given varieties of fruit. After these had come into full bearing we had a surplus of summer fruits—not enough to sell, and yet too much to waste. I then went over the orchard and by grafting and budding I made practically all of the summer apples carry at least two varieties. This gives us ample fruit while the season of that especial fruit is at its best, we have some to give away, but none is wasted. Thanks to this system I have been able to cut out one entire row of "extra trees" and the space formerly wasted is devoted to asparagus, rhubarb, strawberries, currants, gooseberries and raspberries that we have long desired but never could quite find the space for. We have found the change so satisfactory that we wonder how we ever waited so long before making it.

Washington.

Bake Your Own Bread

"Let the good old-fashioned housewife buy an old-fashioned barrel of flour and bake a good old-fashioned batch of bread," declared L. L. Winters, a director of the Chicago Board of Trade, in reply to the statement that "the price of bread is about the only article of food that has not declined."

"During the war an accentuated demand for bakers' bread sprang up, partly because the baker was more expert in making an edible loaf from mixtures. The housewife has continued buying bakers' bread because it is easier. The baker contends that while ingredients have declined, labor is higher than ever.

"A general movement on the part of the housewife to lay in a supply of cheap flour now would materially help to stabilize the price of the farmers' wheat, besides strengthening the consumer's purse. The farmer wants the government to do something to advance the price of wheat. The consumer wants somebody to do something to reduce the price of bread. The solution lies in their own hands. Instead of contributing funds to promote new marketing facilities and to destroy organized grain exchanges which are the most useful servants the farmer ever had, the farmer might better start a campaign to remind housewives of the attractive qualities of home-made bread. Only a little team work is needed to solve the problem.

"In home bread making the labor cost is nothing, the bread is more wholesome and the necessity of paying 18 cents for bakers' mixed bread is eliminated."

Meat canning time is here. Many housewives would as much think of failing to have a good supply of canned fruit as to be without canned meat.

"HANES" is nationally standard underwear—*it will make good to you!*

Trade Mark HANES ELASTIC KNIT UNDERWEAR

EXTRA wear, extra warmth and extra comfort are built into "Hanes" winter underwear for men just as accurate time is built into a good watch!

Your own test will prove why our guarantee on every "Hanes" garment is so broad. We know what "Hanes" must deliver to you in satisfaction! "Hanes" never disappoints!

"HANES" heavy winter weight union suits and the new silk trimmed, full combed yarn medium weight union suits (carrying the yellow Hanes label) have the non-gaping tailored collarette and elastic knit, shape holding arm and leg cuffs; buttonholes last the life of the garment; an extra gusset assures extra comfort across the thighs; the "Hanes" closed crotch *stays closed;* pearl buttons sewed on to stay; reinforcements strengthen every strain point.

"Hanes" heavy winter weight Shirts have the snug-setting elastic knit collarette and arm cuffs. Drawers have an extra wide, durable 3-button sateen waist band that assures comfort and service.

"Hanes" Boys' Union Suits are wonderful value because they give such extraordinary service! Made in sizes 20 to 34, covering ages from 2 to 16 years. 2 to 4 year old sizes have drop seat. Four desirable colors.

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The Practical Farmer

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Winter Covers and the Corn Crop

W. F. MASSEY

A CORRESPONDENT asks advice, and says that he has a heavy growth of peas and crab grass on his land, and he wishes to know if these will not make a sufficient winter cover to turn under for corn in the spring. This shows a widespread notion that any sort of growth will make a good winter cover. But a growth of dead vegetation will be only a mulch and not a winter cover. The object of a winter cover is to catch and retain the nitrates in the soil and preventing their leaching from the soil and being lost. Hence the winter cover must be of living plants hardy enough to stand the winter and to take up the soluble nitrates and store them in the form of organic nitrogen to return to the soil in the spring.

Another reason for the winter cover is to increase the organic decay in the soil and to gain more nitrogen from the air through the use of a leguminous crop as a winter cover. The selection of the best winter cover crop will depend in any section on the hardiness of the legume crop that should be grown there. In the southern half of the tier of counties on the line of Pennsylvania bordering on Maryland, the annual Crimson clover is the most readily available crop. But in the northern part of these counties this clover is not hardy enough for a reliable winter cover. In the lower half of York county it has become the common practice to sow this clover in the corn fields in July. It makes the best of winter cover crops and not only serves to prevent the loss of nitrates, but it is busy through the late summer and fall fixing the nitrogen from the air in its growth to be returned to the soil in the spring.

In the colder sections of Pennsylvania the old medium Red clover is the best, but takes longer to get and grow than the annual clover. Hairy vetch is also a good and hardy winter cover. When it is necessary to sow a winter cover crop late in the fall, rye is very commonly used. This plant has not the power that clover and vetch have to get nitrogen from the air, but it does take up and store, in the form of organic nitrogen, the nitrates that would be lost in the winter rains. Rye has the sole advantage that it can be sown later than other cover crops when the soil comes bare in fall.

"Behold, I bring you tidings of great joy.....unto you is born this day, in the City of David, a Savior, which is Christ the Lord."

The important matter is to first arrange the rotation so that there will be no difficulty in bringing a growth of clover, either the annual or the Red on the land preceding the corn crop. Corn delights in an abundance of nitrogen and also in an abundance of moisture. The decaying organic matter retains moisture and helps to tide the plants over a droughty summer, and the nitrification or change into nitrates of the organic nitrogen fixed by the clover adds wonderfully to the growth of the corn.

Corn is the crop in the rotation which can best handle the turned under material, not only of the cover crop, but the rough farm manure. The best practice in the handling of the farm manure is to get it out on the land as fast as possible after it is made, and the winter cover crop furnishes the place where it can best be used. The manure is saved from waste by getting it spread on the land as soon as practicable. Manure left in piles heats and wastes rapidly. That in the barnyard, too, is wasting in the winter rains, and even under a manure shed it is losing ammonia. Spread on the clover it, of course, helps as a mulch or protection and aids in its early growth, so that there is a heavier growth to turn under. I have seen farmers in the best agricultural counties of Pennsylvania loading up the manure into wagons and hauling it to the field, and forking it off in piles to lie and handle again to spread. In this method they are making two mistakes. First they let the piles often remain most of the winter unspread, and then any small grain sown on the land grows in rank clumps and lodges where the piles were left, and the effect of the piles is a loss. Then, too, the waste labor, which in these days is an important error. They handle the manure three times when one handling would suffice if the manure spreader was backed at the stable door and loaded as the manure accumulated, and, when full, driven to the field and left neatly spread on the cover crop. The manure and the cover turned under in the spring not only make a bigger

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The Prosperous Cow

W. F. McSPARRAN

THERE has never been a time, probably, in American farming when worth and efficiency were so important as today. We are subjected to falling prices for most of our products, while our essential farm purchases, such as feeds, implements, fertilizers, harness, motor fuels and lubricants have not declined in proportion, and farm labor has not declined at all nor become any more plentiful; in some instances, indeed, even higher wages are being demanded for next year where men are employed by the month or the year. Hence it seems imperative that the farmer, for his own sake, should plan and work to make every move count.

In this connection I want to note a few facts relative to dairying and to feeding the prosperous dairy cow. It needs no argument nor data to prove that farmers should organize for mutual protection and advancement of their interests. Such organization need not, and should not, be to work hardships on those to whom the farmer sells. Probably the most comprehensively useful organization for us farmers is the Grange. Other special organizations—as the Dairyman's League, for the dairyman—are movements we should support and be loyal to. But after all we may do in a large way in the line of organizing, our individual successes are going to depend largely and finally upon ourselves. We lean on broken reeds who depend upon agents and boards and delegates to assume or adjust our personal obligations and responsibilities.

Any combination or organization of dairymen that would boost a cow that yields only 200 pounds of butter, or its equivalent in milk, in a year to be profitable to her owner, should come under the ban of the law. Such a cow is a wastrel and the man who keeps her, owns and feeds and milks her is an enemy to good dairying. Such cows are not only millstones to their owners, but must be regarded as the greatest handicap to the profitableness of better cows capable of making profits; for, unfortunately, there are hundreds of thousands of such wasteful, losing cows, and the milk they produce, at a loss to their owners, represents the "balance of power" on the market. The responsibility of owning, and continuing to own, such cows is personal to the owner. There is no arithmetic by which it can be figured out how such cows can be made to pay for ownership, feed and labor.

Therefore, the first question for the business dairyman to ask his individual cows is: "Are you worth keeping?" If they are not, they should be put out of the dairy as quickly and profitably as possible. If they are worth keeping they then should be cared for properly and fed generously and economically.

I know no way so dependable for the dairyman to secure cows with a reasonable expectation of their being good as to produce them himself. This proposition involves the elements of good breeding, a subject which is outside the limits of this article.

It is understood, of course, that the basic profitable dairy ration must be home grown—such as good nutritious pasturage, especially on lands not well adapted for tillage; an abundance of early cut, properly cured hay and fodder crops, and always corn and oats where and when it is profitable. The fodders and hays should always be available for summer and fall feeding if found necessary by reason of pasturage failure or shortage, for profitable dairy feeding means continuous efficient feeding. There must be no poverty-stricken, "consider, old cow, consider" periods if the cow is expected to maintain her full yearly production or do it at even minimum cost. The flood-tide of a good cow's milk should not change and vary with the moon, but be continuously constant as the sun; and to have this the supply of proper feed must be as constant. It will not do to consider it is too expensive to keep a cow full fed when she has the green pasture fields to wander over, for it will not pay in the long run not to feed her, if for any reason the pasture is not sufficient for her needs.

Probably to say again that a cow's milk comes from her feed may be a commonplace, but it is unalterably true, nevertheless. All the good breeding in the world will not overcome lack of feed, but we can be assured that time and again lack of feed and care have overcome good breeding.

Plenty of time to clean up and repair all the harness these winter days

The farm that has soil adapted to grow alfalfa should grow it. Indeed, alfalfa is such a valuable crop for feed and soil enrichment that the farmer should be absolutely sure his land will not grow it profitably before he abandons the plan of growing it. Mixed Red and Alsike clovers, are, of course, our steadfast stand-bys. We may have places for sweet clover and soy beans, also. Crimson clover, in its latitude, can be sown late and fed off early—sown at the last working in the corn it will be ready for early pasturage or for soiling and its land be used for late potatoes or corn.

With time and labor available, I often cut a crop of hay from land to be put in corn the next spring and immediately following the hay manure, plow and plant to sorghum, early maturing dent corn, or large growing sugar corn, and have heavy growth for the silo or for fodder forage. Sowing crimson

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A Better Market for the Farmer's Eggs

J. RAYMOND KESSLER

MANY farm flocks could be made considerably more profitable if the flocks maintained were pure-bred fowls of some well known variety and an effort made to produce hatching eggs instead of selling all of the product in the food market.

I know a majority upon reading this will think the suggestion nonsense for the average practical farmer, for selling hatching eggs naturally brings to mind advertising and other expenses, not to mention competition with the hundreds of breeders of pure-blood fowls now in the market. This, however, is not the idea in mind. The market I would call attention to is that of the large commercial hatchery making a business of selling day-old chicks.

Many of these hatcheries find the demand for chicks far greater than the supply and in order to meet the demand are buying eggs from those having pure-bred flocks. These hatcheries also find it almost impossible to have on hand flocks of all varieties from which to secure the eggs to supply demands for the numerous varieties called for. Many hatcheries have also found that eggs secured from small flocks on free range, as the farm flock, give better results in point of hatchability and vitality of the resultant chicks.

Some of the larger hatcheries even make contracts with reliable parties who will guarantee the eggs to be from pure-bred hens. These contracts are usually made for the production of the flock during the hatching season, say from February to June, and in some cases for a month or so of the fall. Distance from the hatchery need make no difference, for few hatcheries can obtain all the eggs of the kind required in their own locality. The modern shipping case and express forwarding will make safe arrival easy.

Price arrangements vary with the season, the fertility of the eggs, the breed of fowls, and, of course, supply and demand. The early season eggs bring more than those produced later in the year because the supply of eggs is small and the demand for early chicks large. This consequently allows the hatchery to charge a higher price for the early season chicks, allowing them to pay more for the eggs. As to breed, the hatching eggs of many of the less common breeds sell for more than the better known ones, but the demand is, of course, smaller. For that reason it is often better to carry the better known breeds and sell a large number of hatching eggs at a smaller price, than to have an uncommon breed and sell few eggs at a high price.

A majority of hatcheries buy their eggs by the hundred at a set price per hundred (price set for each month) and some allow a percentage above the set price in accord with the fertility of the eggs. For instance, at the set price they will, we might say, expect 70 per cent. fertility. If the eggs test 80 per cent. fertile a certain increase over the set price is allowed, if the fertility is even greater a still greater percentage is allowed, etc.

For those having a pure-bred flock on hand, the fall and early winter is the time to make arrangements with the hatcheries for the product of the coming spring. Those interested should write some of the large hatcheries advertising chicks for sale and state what they have to offer. If no other way

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DECEMBER 15, 1920

MERRY CHRISTMAS, folks!

Doesn't seem like a year since we were last saying that to one another, does it? How time does fly!

I heard a fellow, who had been surprised by the "suddenness" of the thing—just as many of us who are getting older every year are thus surprised—say he "just hadn't been able to get into the spirit of Christmas yet." I knew what he meant—that he hadn't reached the stage of conviviality that would rush him into a good-natured battle with the holiday shopping crowds to buy holly wreaths and Christmas cards and presents for Jane and Jim and Sally and the others—to spend more than he could afford and pave the way for an after-Christmas pessimism. But he set me thinking.

What *is* the real spirit of Christmas, anyway? And how many of us not only are not in that spirit today, but never *have* been in it? Um-m-m!

Well, what is Christmas—what is the occasion we are celebrating? Why, the birthday of Jesus Christ, of course. And what—or rather *who*—then is the Spirit of Christmas? Just Jesus Christ Himself. Are we in that Spirit, and He in us?

The Spirit of Christmas, then, is more than mere conviviality—it's joy; not excitement, but peace; not worry, and extravagance and over-indulgence and pessimism, but the "rest of faith" and love and good will and optimism. And this Spirit of Christmas is not limited to a day or a season—He *lasts;* "Jesus Christ the same yesterday, and today, and forever."

Have *you* taken to yourself the Spirit of Christmas, friend? If not, take Him this Christmas and celebrate your new birthday with His. And then no matter how rapidly the seasons roll around they'll never catch you lacking in the Spirit of Christmas, the joy unspeakable, the peace that passes all understanding.

I wish you a Merry Christmas, once again, good friends! EDWARD T. WALKER.

Making These Ends Meet

JUST at the present time the farmers of this country are confronted with the peculiar situation of having a superabundance of feed and a scarcity of stock to eat it. Talk with farmers from almost any section of the country, and you will hear them say: "We have more hay and corn than we know what to do with." These crops having been grown under the old high-priced regime, it is difficult to get prices for this surplus feed that will pay the cost of production. So the farmers hardly want to sell at present rates.

Then, too, there has for some time been a steady drift toward less stock. We need not stop now to ask why this should be so. The fact is apparent. Stock has been going from the farm right along. Because this has been so, prices for cattle of all kinds have been hammered down, until, as one man said to us the other day, "It is hard work to get fifty dollars for a good cow."

In the face of such a condition, the question uppermost in the minds of many men is, "What am I to do with my stores of feed?" One of the best farmers we ever knew made this plan when he was confronted with such a situation: He bought young stock wherever he could find choice animals that the owners would part with, and fed his hay and grain to them. He rarely failed to make money by this operation. Even if prices for meat should go still lower, men who follow this course would be likely not merely to break even, but to make some money.

Then, too, there surely will be a scarcity of cows in the near future. It would be the part of wisdom to get ready for that state of affairs, by saving every good heifer calf born on the farm for the dairies of tomorrow, and by buying up good calves of farmers who were willing to part with them and using up surplus crops that way. This surely would be casting an anchor to the windward.

It Will All Come Back

A FARMER said to us the other day, "I have invested a good deal of money in improving my farm and equipping it for business, but I never paid out anything that brought me such good returns as that spent in sending one of my boys to the agricultural college."

We are reminded of this by the statement that the Pennsylvania State College is about to ask the Legislature to appropriate for its support the sum of $6,410,000 to be used in the years 1921-3. In these times of high taxes and enormous expenditures for living generally, it may seem to some that this is a heavy outlay of money that cannot well be afforded. And yet, the returns from an investment of this kind are different from, and altogether greater than, those from most other causes to which the taxpayers are asked to contribute. Indeed, they can scarcely be compared with those derived from the ordinary appropriations made for carrying on the business of the state.

As outlined by the officials of the State College, the causes which will be benefited by the six million dollar appropriation are all of them very closely related to the bettering of all life in the state and country. More than half of the desired amount is to be devoted to the School of Agriculture, the experiment stations, the Institute of Animal Nutrition, School of Engineering, Liberal Arts, Natural Science and Mines. Then reasonable estimates are made for home economics, physical education, military science, library, the coming summer session, buildings, and finally for the purchase of improved stock, for which $70,000 is sought.

Not one of these subjects but appeals directly to the best interests of the people. The money, if appropriated and spent wisely, as we believe it will be spent, will all come back, and more, too, in better men and better farming; and because better farming is so closely linked to all life, nothing is more sure than that the commonwealth, and in a large degree the nation itself, will be gainers by granting the request of the college.

Congress and the Farmers

THAT was a striking statement which was made by Governor Harding, of Iowa, at the Governors' Conference held the other day in Harrisburg, to the effect that "the great cities of the nation are constantly only forty-eight hours ahead of starvation, while the farmers themselves are facing bankruptcy and ruin." While there may be a measure of truth in the idea that our large cities would soon be hungry if the farmers were to fail to furnish the needed food supplies, and while it is also true that the farmers of the country are feeling the sudden and severe depression in prices which has lately taken place, still, we cannot believe the situation is as desperate as Governor Harding represents it to be.

Certainly the farmers of this country, if we understand their temper, do not ask that drastic measures be taken in their behalf, such as would be contemplated in the restoration of the War Finance Corporation, or anything like that. Farmers are sensible men. They know, by bitter experience, what would be the effect of too much meddling on the part of Congress in the farming operations of the nation and of the world.

Whatever Congress can do, however, in the way of improving transportation, of protecting home markets, of bringing producer and consumer into closer and more friendly relations and for the opening of markets here and abroad, that the farmers would wholeheartedly approve.

More than any other thing else at the present moment, as we see it, there is need of clear thinking, and earnest and sane consideration of existing agricultural conditions, so that not only the farming community, but all classes of men may be helped out of the difficulties into which the world has unquestionably fallen. If such thought and such action should prevail, it would remove all danger that our country will be swept into rash and perhaps ruinous legislation. It is a time for reason and sound judgment to assert themselves.

Editorial Briefs

We owe an apology to our subscribers for the lateness in appearance of our December 1st issue. Mechanical trouble in the press room held up the printing for over a week and caused a longer delay than we have ever before experienced. Please excuse us. We hope and expect that *this* issue will be out nearly, if not quite, on time.

From many sources come reports of lowering prices for bread and milk, our two great staple food products. Because we are assured that this decrease in the cost of living is not being purchased at the cost of comfort, the peace and the happiness of the farmer folk, but traceable directly to diminishing prices for the things which enter into the production of milk and grain, we cannot help being very thankful that people everywhere, little and big, may now have their extra bowl of bread and milk for supper every night.

Not everyone is cut out to be a breeder of pure-bred stock. The first question any man should ask of himself when he contemplates entering this business is, "What am I doing this for? Love or money?" If it is love, pure and simple, all right. Things will come out all right. But if money is the only incentive, better go slow. It is dangerous, from start to finish, with the finish not very far in the future.

Burning corn because coal cannot be had does more than keep the homes of farmer folks warm. It makes somebody hungry. It stunts the growth of little folks. It works to the harm of the coming generation. There is coal enough. Speed it along, you men who have control of these things, and help to make the world of today more comfortable and the men of tomorrow healthier and more competent to deal with life's problems.

The debt of the United States has increased from $11.00 per capita in 1913, to $225.00 now. But if we can really feel that the world has been made the better at such a cost as this, why may we not say, like true men and brave, "It is all right. God knows why the war had to be. He will help us to pay the bills."

The farmer's megaphone—a good farm paper.

Ins and Outs of Small Fruit Culture

DANIEL PROWANT

(Concluded from Dec. 1st issue)

The trees will require comparatively little attention before they come into bearing, the annual pruning to properly shape the head and remove surplus wood growth, and the necessary sprayings to keep them free from insect pests being all that is required. The berries will likely require considerable more attention than the trees. One pruning annually is all that is required, and this should be done in early fall, at about the time the leaves fall, or soon afterwards. At this time all dead or badly damaged canes should be removed, and the remaining ones thinned to not more than seven to each plant, leaving only the largest and strongest. These should also be pruned in such a way as to leave them standing stiff and strong, and not apt to be broken off by winter winds. It is much better to have the canes short and heavy than long and slender, and more fruit will be gathered from such plants each season. If any canes are killed during the dormant season it is, of course, necessary to remove them the following spring, but this seldom happens if the field is well cared for. Much pruning can be saved, and the plants will grow stronger and produce more fruit if the grower never allows the canes to grow too long. The best method of avoiding this is to go through the field several times during the growing season and break out the tip of the cane as far down as it is tender and will break clean. This prevents the canes from growing to an extreme length, makes them branch out and become heavy and strong, and gives much more chance for the fruit buds the following season.

The life of berry plants will depend largely upon how well the grower cares for them. After a few years the stored-up fertility in the soil will become pretty well exhausted, and if the grower wishes it to continue to be productive it will be necessary to add additional fertilizer each year in the form of a light mulch of finely pulverized nature, so that it can be mixed into the soil readily by means of cultivation. If manure for this purpose cannot be obtained readily some commercial fertilizer is of much value, but we recommend the former when it can be obtained, as it is usually cheaper and remains in the soil longer. In but few cases are the berry plants attacked by insect or fungous pests, but when such cases occur prompt measures must be taken to stop the ravages of these pests. For rust, mildew blight and other diseases of like nature, spray with Bordeaux mixture just before the buds swell, and repeat every two weeks until the fruit shows signs of ripening, after which no more should be used until after the fruit is all gathered. Foliage worms are quite common on the currant and gooseberry, and if not gotten rid of they will soon strip the plant of its foliage and ruin the crop. For these use arsenate of lead, one pound to 40 gallons of water as a spray, applying just after the foliage appears, or as soon as the worms are noticed. There is no definite date for the second spraying, and it may be given whenever the presence of worms makes it necessary, except that it is not to be used after the fruit nears maturity, as it is somewhat poisonous.

Late frosts sometimes work great havoc with the fruit grower's prospects for a season's crop. A single late frost after the trees and plants are in bloom can, and in most cases does, spoil the entire crop for that season, regardless of how much other effort the grower has put forth. A simple little trick we use to greatly lessen the chances of anything like this happening is to scatter some fresh manure around the trees about three or four inches deep while the ground is frozen up solid during the winter months. The manure should be spread over a little larger area than the tops cover, and must not be placed against the tree, for if it is the mice are apt to harbor there and girdle the tree or do it serious injury. This manure keeps the frost in the ground at least a week longer than it would otherwise remain, and the fruit buds do not get started in time to be injured by the late frosts. If this method does not appeal to the grower for the reason that it makes his crop a few days later in ripening, or is impractical on account of the lack of manure, he can resort to smudging as a protection against frost. This is done by making a number of fires on the windward side of the field, and putting on these fires any kind of waste material that is slightly damp and will produce a dense smoke. In a large field it will likely be necessary to have a number of fires near the center of the field also, and they will likely need attention several times during the night. The smoke from these fires acts much as a blanket of clouds, retaining the warmth of the soil and preventing injury by frost.

Finding a market for his products at profitable prices need not worry the fruit grower at this time, as never before was there such an enormous demand for small fruit at high prices. In any section of the country where fruit can be grown and fruit growing is not carried on exclusively, most of the fruit may be sold without the owner leaving the farm. In our own case we are obliged to turn away many patrons each season, and the crop is often entirely engaged long before it is ready for sale. Whenever it is possible to do this (and in most cases, except where there are many persons engaged in fruit growing in the same locality, it is possible) there is a decided advantage, as the purchasers usually bring their own containers, which greatly lessens the selling expense, and the grower is also not required to deliver the product. We usually sell a few cents cheaper this way than when compelled to deliver the fruit to market. Whenever conditions make it necessary to sell in the markets, whether local or distant, every effort should be made by the seller to see that the fruit is placed on the market properly and in excellent condition. All berries are best marketed in one bushel crates, which contain 32 quart boxes, which protect the fruit and bring it to the consumer's table in a way that will be appreciated.

Tree fruits, such as peaches, cherries, plums and apricots, are marketed in one-half and one bushel baskets. Care should be used to see that the fruit is not over-ripe, especially if it is to bear shipment. These baskets are usually covered with pieces of mosquito netting to keep out the insects, as these are sometimes quite destructive if the fruit is too ripe and the retailer has to exhibit his goods for sale in an open case or window. Netting of the same color as the well ripened fruit of that particular variety should always be used in covering these baskets, and aside from its practical value in protecting the fruit it makes it show up well, and anything that appeals to the eye of the prospective purchaser in this line of business is worth attending to. The market is for *good* fruit, and in order to be good it must also *look* good.

Like everything else, fruit growing requires a willingness to work, promptness in delivering orders and strict attention to business to be a success. A fruit grower should make it an important point never to promise to deliver an order of goods on a certain date unless he is reasonably certain that the agreement will be kept, whether the delivery is to be but a few bushels or a carload. Under certain conditions plucked fruit is readily perishable, and the retailer, if he handles the grower's products in any large amounts, must have correct knowledge at least a few days in advance, so that he can advise his patrons of its expected arrival, as if a ready market is not at hand some loss may result to the retailer and he will be apt to be reluctant to buy again of an unreliable party. *Ohio.*

Grow Your Own Trees and Bushes

CHARLES OLIVE.

If you have some trees and bushes on your farm, you need not buy a lot of expensive stock to increase the size of your grove or orchard. You can grow your own from cuttings taken right on the farm. Should you not have just the trees or bushes you wish to grow, perhaps your neighbor has them, and he may allow you to take a few cuttings. He can have no objections, as you will do his trees no harm. We have not found any nursery stock better than that grown from cuttings taken in our immediate neighborhood. These usually grow, but many of those we have purchased at high prices from distant places have not grown at all.

Grapes, gooseberries, currants, willows, privet, poplars, cottonwoods, snowballs and many other trees and shrubs can easily be propagated on any farm, and no special horticultural knowledge is necessary. The first grove on our farm consisted of cottonwoods, all grown from cuttings furnished by wild trees growing at a neighboring lake. We made the cuttings in the fall, simply setting them out on the prepared land in the spring, and most of them "caught." They were never transplanted, but immediately set out where they were intended to remain. All cuttings can be taken as late as in December.

Having decided to multiply some of our trees and shrubs, we sharpen our knife and go out hunting for new wood growth. We soon discover some healthy-looking branches, and snip off our cuttings, making them about seven inches long, each one having at least two buds, one near the middle of the cuttings, and the other close to the top. We select wood that has a fresh, green hue, and that will start to show its life with the first coming of spring. We like to make cuttings on damp, misty days, partly because it is then easier to discern the hue of the wood, and partly because we find a pleasure in being out among the trees on such days.

Having gathered a sufficient number of cuttings, we bundle them together in bunches of 25 or 30, the tops all one way, and tie them firmly with twine. Then we bury the bundles, bottom ends up, in moist sand in a cool room in the cellar. Sand-mixed soil can also be used, but it should not be wet and sticky. The cuttings are covered about three inches deep with sand or soil, and soon they begin to produce fine roots on their lower ends. Sometimes we use cottonwood and willow cuttings about half an inch thick, and in the spring simply force them down in the soil where they are to stay. They grow easily without transplanting if the season is not too dry.

Fruit trees and other plants, however, we always transplant. We set out the cuttings as early in spring as can be done without danger of freezing. The land is prepared as for corn, and should be damp, but not too soft and wet. The cuttings are set out, about five inches apart, in trenches half a foot deep. Of course, the tops are above ground, and the soil is packed down firmly. The land is then cultivated as for garden plants. Leaves will appear on the cuttings in a short time, and then tiny shoots grow out. When the next spring comes, the cuttings are fine little trees, ready to transplant. Best results are obtained when the transplanting is done on cloudy, damp days. *Minnesota.*

Will Show Seed that Grew the Best Spuds

Use of the proper kind of seed meant the difference between profit and loss for many New Jersey white potato growers during the past summer and the methods of selection and wisdom of using such seed will be made an educational feature of the fruit and vegetable show during Farm Week, at Trenton, January 10 to 15. T`e show will be held in the Second Regiment Armory in connection with the annual meeting of the State Board of Agriculture and other state farm organizations.

Most of the farmers' co-operative associations are now buying only certified potato seed and the State Department of Agriculture believes that the value of this practice should be demonstrated for every individual farmer. The certified seed exhibit will be staged in co-operation with the New Jersey Potato Growers' Association and will show the pure-bred, disease-free types of Green Mountain, Giant and Cobler varieties. New Jersey farmers who have been converted to the use of the certified seed, which is grown under a system of careful state inspection, are said to be enthusiastic over the results obtained in bigger crops of higher market values.

Christmas, in the country, of all places, should be a community holiday. It's too big a thing to be kept all within your family.

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"The big Goodyear Cord Tires on our two motor trucks are helping us to reduce the high cost of farming. These pneumatics travel anywhere in the fields and, during threshing, enabled us to dispense with eight teams and eight drivers. We had had to pay the drivers of these teams up to $8 a day, in addition to the cost of the teams and the outfits. Also we have sold pasture and bought farm land in place of it. There are many other savings—of labor, time and money. Due to the quickness of the big Goodyear Cord Tires, we now can make more hay while the sun shines."—M. W. Bever, Farmer, Colby, Kansas, Rural Route No. 1

IT is everywhere observable, as above, that the traction, cushioning and activity of Goodyear Cord Tires on motor trucks, effect large savings for farmers.

This traction overcomes handicaps of soft, slippery going, of weather and of grade which formerly caused hauling delay and added expense in all kinds of farming.

This cushioning safeguards loads liable to injury, shrinkage or waste when unduly jarred, and thus enables the sale of full quantity and quality at best prices.

This activity permits entirely economical hauling to and from motorized machinery, and by bringing more selling points within hauling range, often reduces marketing costs.

All these virtues of the big pneumatics are made most practical by Goodyear Cord construction which sinews them with unusual strength and endurance.

Farmers' reports on motorization and pneumatics will be mailed to anyone interested, by The Goodyear Tire & Rubber Company, Akron, Ohio, or Los Angeles, California.

GOODYEAR

CORD TIRES

Law for the Farmer

LESLIE CHILDS

II. ON CONTRACTING TO BUY LAND.

Years ago, when a good farm could be bought for a few dollars an acre, and in many cases could be had for the price of filing an entry in a government land office, the question of title was not of great importance. But at the present time, with land selling at from $50 to $500 an acre, the title question becomes one deserving of careful attention.

So the prudent man, when he buys land today, insists that the land be deeded to him free from any serious defects in title. And, in order that there may be no question about soundness of the title, it is usually stipulated that the seller shall furnish an abstract of title down to date. This abstract then is examined by the buyer, or someone in his employ, and if it shows a sound and acceptable title, the buyer feels justified in closing the deal.

However, this care of the average person, in the matter of demanding an abstract of title, does not always extend to the signing of a contract in which he agrees to buy land. And, as most real estate deals are initiated by the signing of a preliminary contract, the real danger of misunderstanding starts at this point, which should be carefully guarded.

Contracts of this kind are usually in skeleton form; possibly drawn with a lead pencil and signed. They are generally entered into after the buyer has inspected the land, agreed upon the price, terms, and the time that he is to have possession of the same. Then follows a stipulation relative to the title. This frequently recites that payment is to be made when the seller furnishes a warranty deed, and brings his abstract down to date; providing such abstract shows a "good," "merchantable," or "marketable" title.

Upon signing of such a contract, in which the prospective buyer agrees to close the deal, providing the seller's abstract shows a "good," "merchantable," or "marketable" title, he (the buyer) has given up his right to be the sole judge of whether the title shown is sound or not. This is so because the question of whether an abstract shows a "good," "merchantable," or "marketable" title is one of fact over which men of sound judgment may honestly disagree.

It then follows that if the abstract furnished by the seller does not show a perfect title (and few abstracts do show such a title) the buyer may have honest doubts as to whether the abstract shows either a "good," "marketable," or "merchantable" title. The seller, on his part, may honestly believe that the abstract shows a sound title. Here, then, are all the ingredients of a bitter lawsuit.

The seller stands his ground, tenders a warranty deed, and insists that the buyer close the deal. The buyer refuses and the whole dispute is taken into court where the question is eventually decided one way or another by disinterested parties. Which procedure means a loss in time and money to all concerned, and in the great majority of cases could have been avoided had the buyer exercised prudence in signing the contract of sale, in which the kind of a title to be shown was stipulated.

If, for example, the buyer instead of signing a contract agreeing to buy the land providing the abstract showed a "good," "merchantable," or "marketable" title, had insisted that the stipulation be that he would take the land providing the abstract of title showed a title satisfactory to him. There could arise then, no after question of fact, relative to the kind of title that the abstract was bound to show. He, the buyer, by this method retains the right to be the sole judge of whether or not the title is sound. And so long as his objection is made in good faith he cannot be compelled to complete the contract.

So then, if after the abstract is submitted, it fails to show a title satisfactory to the buyer, he may decline to complete the contract until the seller has cleared up any minor defects in the title that the buyer thinks should be cleared. While, on the other hand, as illustrated above, if the buyer agrees to take the land providing the abstract shows a "good," "merchantable," or "marketable" title, he has cut himself off from afterwards being the sole judge of the title he is to accept.

This point in buying land is one that is frequently overlooked by well informed men. And it is believed that there are more court cases every year over contracts of this kind than there are over actual defects in titles. It is a good point to bear in mind when buying a farm; and unless the buyer has definite knowledge of the title to the land he is contracting for, he will be but protecting his interests in insisting that the contract binding him to buy, stipulate that the abstract show a title satisfactory to him. *Indiana.*

Care of Garden Tools

Wheelbarrows, hoes, rakes, shovels, picks, cultivators, trowels, weeders, spading forks, etc., are carelessly thrown aside after their summer's service. Next spring they are found the worse for rust; sometimes entirely ruined. Paint applied to the metal as well as the wooden parts before putting them in winter storage would protect them from rust. In the spring after a few days of use, the paint will have worn off the working parts, leaving the metal bright and clean. Tools will last much longer if given this treatment.

Markets Demand Graded Products

Grading of all farm products before they are marketed is rapidly looming up, according to some New Jersey farmers, as a necessary move for the protection of the grower and the consumer against the wiles of the profiteer and other economic ills. State and federal marketing bureaus are also advocating the adoption of grading standards established by law, as a step toward the stabilizing of the agricultural industry, with resultant benefits to the entire country.

New Jersey farmers, during the present season, are finding their products in keener competition than ever before with graded fruits and vegetables from other states. Sweet potatoes from the South, whose farmers are planning to turn from cotton to yams, are pushing the finer quality Jersey "sweets" in many markets chiefly because they are put up in graded sizes and the dealer and retail customer each knows what he gets when he orders a certain grade.

Graded western apples, of decidedly inferior taste, are selling in New Jersey fruit growing sections as well as New York and Philadelphia markets, largely because they are marketed only in graded packages which appeal to the dealer. By establishing egg grades by law, Canada has taken away practically the entire egg exporting trade of the United States in recent months, because European dealers prefer graded stock.

Milk grades already are advocated by many public health departments and the proposed graded list would include most of the fruit and vegetables.

Jersey peach growers are leaders in the movement for market grades. Most of the co-operative marketing associations and numerous large growers are packing only graded peaches and thereby building up a reputation behind their trade brands.

A proposed law would not compel any farmer to grade his products, but if he sought the advantages of using the grade names the act would enforce the guarantee of quality and type that the grade name would convey to the public.

What About the Jack Bean?

You have read of it before. It may be some such appeal as this has come to you: "Mr. Farmer, $8.00 invested in American Coffee Beans and planted on one acre will bring you in four months, $400." The Department of Agriculture now takes a hand in the matter, as will be seen from some extracts we make from a recent circular issued at Washington.

The American coffee bean is our old friend the jack bean, says the Department. Ever so often it is exploited as a wonderful new crop. Long ago it was advertised as "Pearson bean" and "Wonder bean." In 1913 one advertiser called it Wataka, or Giant Pod Stock bean, claiming it would yield 400 bushels per acre. Last spring it came out as the South American coffee bean, with the information that it would yield 300 to 600 bushels per acre. This fall it appears as the American Coffee bean, and the seed is offered at $25 a bushel. The extravagance of this price is offset by the promise that each acre of the bean will yield in four months' time a crop worth $400.

The jack bean is at most a crop of very small value. It will yield a fairly large crop of green herbage, but this is so extremely bitter that it is very difficult to get animals to eat it, either green or as hay. Possibly it may be better as silage. The seed crop varies from 20 to 35 bushels per acre. The beans are not relished by animals, and cattle do not make much gain when forced to eat it, as determined by the work of the Mississippi Agricultural Experiment Station. The bean is to a slight extent used as food by Mexicans and others, but the flavor is very strong and in some cases serious digestive disturbances have been reported. The seeds contain much urease, a substance used in medicine, but a few tons of jack beans supply the world's annual demand for this substance.

The average small woodlot should be a source of home supplies rather than a source of saleable material. There is always a need for fence posts, fuel wood and some lumber.

A little hint dropped now and then as to the desirability of a water system in the farm home, like the little seed, will grow and produce fruit.

They Have Tested It

"I feel that I am not adequately qualified to teach the lesson until I have studied it in the Times. It contains the best and ablest helps that I can find."
A West Virginia Pastor.

"I use constantly your reading suggestion on the lesson, and feel that I cannot get along without them; in fact, I do not see how I could be a Sunday-school superintendent at all without the co-operation of the Sunday School Times."
A Tennessee Superintendent.

"I have been able to get a number of our people to take The Sunday School Times and it is a blessed experience to watch them grow in grace and in the knowledge of our Lord Jesus Christ. Your allegiance to the gospel fundamentals is assuredly refreshing and strengthening in the atmosphere of doubt and uncertainty that is so prevalent."
A Wisconsin Pastor.

"I am a teacher of the Bible Class in a little country church. Seven of the members of my class have subscribed for The Sunday School Times and I look forward with rare pleasure to our weekly talks on the lesson because I feel that your paper will be an inspiration to them, as it has been to me in getting at the heart of each lesson."
A Virginia S. S. Teacher.

Will You Test It—Right Now?

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The Editor's Farm Budget

Our folks made a bee the other night. We all "got out paper, pen and ink" and did up some letter writing that had been waiting for a long time. Wish somebody would do that by our folks. Been a long time since we wrote some letters to folks across the country. I know it is a busy world, but think how much happier we would all be if we kept our correspondence up more closely. What do you say to turning over a new leaf? I'll do it if you will.

This world is a pretty good place to live in, but I can see plainly enough that if neighbor John thinks so I shall have to take back that buck-saw I borrowed a good while ago. When I met him the other day, I could see that something was on his mind. I wouldn't a bit wonder if it were that saw. Anyhow, I'm going to take it down this afternoon.

Because eggs are high in price, many are inclined to greatly increase their flocks. Let's be careful about it. One more hen on every farm in this country would mean more than 6,000,000 additional hens. The more hens, the more eggs. The law of supply and demand will permit some increase in the number of hens, but it is the part of wisdom not to begin a stampede for more poultry.

The litter from the barn floor makes nice picking for the hens. They will pick up grass seed and many weed seeds and these are very delicate morsels to the flock. Saves cost for other feed, too.

Ventilation for poultry is all right, but tree tops do not provide the best route to it.

Two good hens are worth more than a dozen poor ones. Why feed the extra ten? You tell me.

My best judgment is that a farmer had better pay ten dollars for a good rooster than forty dollars for a poor one. When we buy let's be pretty sure we are getting the worth of our money. The pedigree of the hen counts big, but that of the man we buy of is worth ten times the most.

It does not take much real wool to hold a lot of shoddy together. That is why so little wool is being called for now. But aren't we most ready to call a halt on the shoddy business? Who really enjoys paying big prices for a suit of ground-up old pants and things worked over into a new one? I am not smart enough to tell a piece of shoddy from one of all wool, until I have worn it a little while, then I know, all right. What I want, and I guess I am like a good many other folks in this, is a ticket hung on every suit of old rags made over, saying, "This is a fraud." Then I shall know whether to invest or not. Incidentally, I shall have a better price for my wool pretty soon. So will the rest of us.

We had a sheep get down one day in winter, with her back down a little hill. She had been out in a cold storm and her fleece was soaking full of water. If we had not found her just as we did, we would have lost our fine old ewe. Since then we have tried to keep our sheep in out of such storms.

Why should anybody think that hogs are just as happy, and that they will, therefore, do as well with a bed of nasty, wet straw? They are creatures with feelings like the rest of us. To be comfortable they must have a dry nest, and that means more pork and more money for the master.

Snow melted makes water all right. But the best place to warm it is not a sheep's stomach. Better see that the trough is filled with good water regularly.

Raising Guineas

MRS. JOSEPHINE UMOSELLE.

How many farm women have ever tried raising guineas? I find that it is a profitable addition to the farm poultry. I always keep a flock of about two dozen guineas, consisting of about 20 hens and 4 males, and each season I raise 100 to 150 young. I never keep a guinea hen after the third year, for she lays best while young. The guinea eggs are put under my largest Rock hens, for I am more successful with chicken mothers for the broods than with the guinea mothers.

It takes 28 days for the eggs to hatch, and the wee birds must be very carefully tended during the first ten days. Dampness and chill are fatal, and they are so tiny that they can slip through the meshes of the ordinary chicken wire. I utilize the old screening taken from doors and windows for their coops, and let them out during the middle of the day only, with the mother hen confined, until they are two weeks old. Feed them as you would little chickens, starting them on pin-head oatmeal, and gradually changing to a commercial chick feed or any cracked grain mixture.

The next critical time in their lives is when they are changing the earlier feathers of a brownish hue to the Quaker gray of the adult bird. Feed them during this period; at other times they will seek their own living on range, where they destroy innumerable bugs and insects in the fields and gardens, and they do not scratch as a chicken does.

Some people dislike their strident cries, but they utter these only when frightened, or when driving away marauders, such as hawks, crows, stray cats or dogs. The usual call of the hen is the contented "Buckwheat, buckwheat," a call that blends in with all the other barnyard sounds.

In cold weather I allow the guineas to roost inside the chicken houses, but on the first warm days they usually will begin staying outside on their own accord, perching aloft in trees or on roofs from which vantage point they are ever ready to alarm the sleeping family if anything or anybody skulks about the barnyard. They are a good burglar alarm, easily installed and never getting out of order.

As to the profit in raising them, each hen will lay 85 to 100 eggs a season, beginning in April or early in May. These eggs are just as good to use for your own household as the chicken egg, and this will leave all the hen eggs to go in the market-basket. As the egg is slightly smaller than the hen egg, I usually use in the proportion of three for two in the cooking recipes, although I do have good success in using them in just the same proportion as the hen egg. The guinea is fed more cheaply than the hen, so that its egg is a cheaper substitute for the egg of the hen, and not a bit less nourishing. The young stock find a ready sale, especially in a city. I sell them direct to an Atlantic City hotel, only 30 miles away, at prices that have ranged through the years from $1 to $2 per pair. I would suggest you write to the steward of any well-known hotel in the nearest city rather than try to sell them to the local dealer, because the local dealer must make his profit, and you may as well pocket this yourself.

The hens will begin, at first, to lay in the same nests with the chickens, but as soon as the grass grows they list to the call of the wild and steal their nests out in the fields. But as the males always stand on guard while the hens lay, the locality of the nests is not hard to find. Then the hens give a peculiar cackle when they have laid, one that is never given at any other time, and once heard will always be recognized. The whole flock will usually lay in one or two nests, but do not remove the eggs every day, or they will change the nest. I always allow at least a half dozen to accumulate before I gather them. *New Jersey.*

A Better Market for the Farmer's Eggs

(Concluded from page 358)

presents itself, write to some of the large incubator companies for a list of commercial hatcheries using their machines, and then write the hatcheries given. Do not let distance discourage you, as the writer knows of a hatchery in Maine that has purchased eggs from breeders in Pennsylvania.

Those entering this field should not expect too great a price for their eggs. Hatcheries do not buy settings of eggs at five and ten dollars per setting. However, the price obtained should be a good deal more than what the food market will pay. This, of course, means greater returns for the same work, excepting that a pure-bred flock is absolutely necessary.

Where one is located in a community supporting a hatchery it can sometimes be arranged for the hatchery to supply the original flock of fowls, this, of course, with the obligation on the part of the acceptor that all eggs be sold to the hatchery and that only the breed supplied be kept on the farm and every effort made to insure the pure blood of the stock. *Pennsylvania.*

A Worth While Poultry Pointer

Tests conducted at the Ohio Experiment Station show that the amount of meat scrap fed in rations to laying hens does not materially influence the hatchability of eggs.

In separate rations which conatined approximately two, 13 and 24 per cent. of meat scrap, the hatchability of eggs averaged almost 70 per cent.

Even in the rations which contain much more meat scrap than was necessary to produce the maximum number of eggs, the hatchability was higher on the average than from hens receiving minimum amount of meat scrap.

Some poultrymen have held that the eggs from hens fed heavily on meat scrap would be inferior for hatching.

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Studying the "Whys" of Failure

R. B. RUSHING

Two young men starting partners in business, after a time discovered from a careful audit of their books, that they were losing money, and that if they continued the same methods in their business, they would soon be face to face with bankruptcy proceedings. This discovery was something of a shock to their ego. They had gone into business after years of employment with successful concerns and had imagined that they knew about all there was to learn about handling their business. As a matter of fact they had fondly expected to show their old employers something new in the way of selling goods and perhaps give them a feeling of regret that they did not offer such inducements as would have kept them out of the competitive field. Instead, there they were face to face with the easy possibility of a receivership. "What shall we do?" they said. "We cannot long continue in this way."

Did they continue doing business in the same old way until the sheriff closed their doors, and sold their goods to the highest and best bidder? No. Instead, somewhat humbled by the discovery but undismayed, they began to study their business from various angles. They looked about for the location of the little leaks. Little leaks will eventually sink the largest ship if unmended. They reduced their overhead expenses by stopping up the leaks. They studied the methods employed by the most successful men engaged in their line; they called to mind some of the methods of their former employers; but best of all, they made a special study of their own trade territory. They learned what the people in their territory wanted, the grade of goods, the probable price limits, their ability to pay and the possibilities of introducing new lines in the developing of new trade, and quit buying what they did not want. Soon they had created new markets and earned a reputation for service.

Now, Mr. Farmer, have *you* taken note of the methods of your most successful neighbors? Why, under almost the same conditions, has some other farmer in your neighborhood been able to grow better crops than you? Did he sell these crops for more money than you did? Did you ever wonder why his animals were in better condition than yours, and how it was that he always received better prices? Why is it that he has money in the bank and good credit while you must mortgage your crops before they are—well, before they are planted? Why has he a better home, better farm buildings and a happy, contented family? "Oh, just good luck, of course. By George, ain't he lucky?" You may have eased your conscience for years with just such an explanation, but be honest with yourself, if you can. Almost makes you want to cuss, doesn't it?

Really, is it luck? Now, do as the young men above did. Get down to real business. Stop up those little leaks. Study your successful neighbor. Consult with him. You may have to swallow your pride. Don't like to approach him? I know how it is. I've been there—and I just feel like taking you by the hand and patting you on the back and saying, "Don't let yourself be down and out. You are never whipped till you think you are."

You will probably find that your successful neighbor is not above reading good farm journals and applying to his needs such suggestions as he finds adapted to the conditions surrounding him. Some farmers don't have time to read. The successful kind finds lots of time to read. I don't believe in making a slave of myself. It don't require that to be successful.

You will find that he studies not only the general markets, but also is posted on the demands of the local market; that he stops the leaks by protecting his machinery, and saves his animals by adopting all the latest labor saving devices and methods; you will also find that he diversifies to fit the market and is familiar with his soils. Briefly, he has made farming his business and studies it from every angle. Why not profit by his experience?

There is no law in the world to keep a man from learning from the experience of the other fellow. You may have to bury some pet pride and go to some fellow you don't like right well. Get right with him and you will like him and he will like you and you both may be made better men and farmers.

The successful farmer is always trying to learn more. If *he* needs to learn more, don't you, if you are unsuccessful? What do you think?

Illinois.

Garden slugs are bothersome pests and a reduction in their attacks next season can be gained now by cleaning up and destroying all litter in the garden.

A paper sack is a handy receptacle for egg shells and trimmings from vegetables while one is preparing a meal, or baking. It will save many trips to the garbage pail and washing of extra utensils.

Winter Covers and the Corn Crop

(Concluded from page 357)

crop of corn, but the summer cultivation of the corn crop gets the plant food from the spring turning under into the finest condition to feed the wheat crop following the corn crop, so that no costly nitrogen is lost. But few fully appreciate the value of the legume winter cover alone in the increase of the corn crop.

This fall I had occasion to observe two fields of corn. One field was on land with which I was familiar in my boyhood. It was then considered the poorest land in the section, a sand that did not even grow weeds, but had sassafras sprouts and little pine bushes scattered over it. This land has been improved mainly through the liberal use of the annual Crimson clover, which has built up a humus soil in place of the clean sand. This summer the growth of corn on that land, where a heavy growth of clover had been turned under, was very marked and promised to make 75 bushels of corn per acre.

Not far away was another farm composed of soil naturally far more fertile than the other. This farm has been cultivated in the old method, such as letting the corn stalks that have been topped die on the land, and a whole season let stand to "rest," as the owner said. He failed to understand that nature never rests, except for the winter, in this latitude. If there is not some useful crop grown nature will not allow the land to lie bare, but covers it with weeds and grass, so that to a slight extent the letting of the land lie bare of crops of greater value, the weed growth does help some.

On this weed growth a corn crop was planted and cultivated this summer. The only help the land got was from the weed growth, and much of that was lost through exposure to the winter rains and the leaching of plant food that might have been saved by a cover crop. While the other poor land farm has been gaining annually, this one has been losing. The corn crop this summer, an unusually favorable season for corn, showed the result of years of waste. While the old sand hill farm had a crop near 75 bushels an acre and no manure but the clover turned under, the farm of naturally far better soil made about 15 bushels of corn an acre and is poorer than ever. The soil when first cleared from the forest was full of humus, or vegetable decay, and was fertile and very productive, and the owners considered it a rich farm and went to work year after year using its fertility without a thought of maintaining it by maintaining what made it productive when fresh—the humus. The Almighty prepared the soil for man's use by adding, year after year, the forest leaves made mainly from the air and added them to the soil, and whenever the greed of man has used up and burnt out the humus and has given up and turned out the land as no longer worth cultivating, nature goes to work curing man's waste. The grass and weeds grow and the tall broom sedge grass catches and harbors the winged seed of the pines, and a pine forest grows up. The deep tap root of the pines reaches down and brings up food from the subsoil and covers the ground year after year with its matured leaves, and their decay adds the lost humus to the soil till finally someone clears off the pines for firewood and has a fresh soil, and a productive one, and no fertilizer man had anything to do with its recovery. From lower Maryland southward millions of acres have in this way been restored to cultivation. It takes nature many years to repair the waste of man, but she teaches us the way by which we can do the same in a much shorter time through the maintenance of the humus through the use of the legume cover crops mainly, and at the same time keep up the supply of the nitrogen that costs so much when bought in a fertilizer sack; on any of our clay loam soils the action of the organic decay will act on the silicate of potash in these soils and release it as fast as needed, so that while we can make large crops and at same time keep the soil increasing in fertility, and finally will need to buy nothing in the way of fertilizer but a carrier of phosphorus. Hence the winter cover and the corn crop are the keys to permanent farm improvement.

Maryland.

WHEN THE WIND SHIFTED

EDGAR L. VINCENT

THE wind was in the south and grandfather said: "If it holds there long enough it will bring rain. It always does." And sure enough along in the afternoon a few flakes of snow came drifting silently down; but the south wind warmed them, so that they did not much more than reach the earth before they melted, and before the sun went down it began to rain.

When morning came, a wonderful change had come over the face of nature. Every bush, tree and fence bore a coat of silver. The branches bent far down toward the earth. Some of them cracked under the load and went down, broken and ruined. What had happened? The wind had shifted in the night so that it blew from the north. Then the rain drops froze as fast as they fell. The rain was all right, but the north wind brought the worst storm of sleet anyone at the farm remembered ever to have seen.

When the wind shifts into the north, look out! It is nice and sunny this morning. Life's tide runs on clear, quiet and calm. It is not hard to say good things, or to do them. It does not seem as if anything could happen to make it any different. Then the wind of life changes.

How little it sometimes takes to send the smiles and the kind words and the generous impulses all flying! Rain changed to ice! Love for the moment changed to harshness and selfishness! And we say things and do them to hurt and sting and mar the happiness of those we would not for the world cause pain!

Is there any way to be sure that this shall never be so? Can we always live with the breezes blowing soft from the south land? Sure! Always keep the face turned toward God's sunshine! Keep far away from life's snowy quarter, and pray hard to be kept warm, bright and cheery!

Agrigraphs

There's a difference beween feeding cows so they can exist and feeding them so they can produce milk.

Profiteering is one war word that has come to stay. But the profiteering hens and cows should not be allowed to stay on the farm.

Uncle Ab says: Some folks may think they're getting a lot out of life by just piling up a big bank account, but some day they're likely to learn different.

Birds as friends of agriculture are entitled to consideration from the farmers. When the snows come the birds find it difficult to make a living. Crumbs and suet placed outdoors may save bird lives.

Why Not Try This on the Side?

J. W. WOLFE.

One of the most profitable "side crops" for farmers and market gardeners—and, indeed, for anyone who has control of shallow streams of running water—is water cress. It requires very little care, and is in demand at all times, excepting in two of the summer months when the plants are flowering and producing their seed. The best quality is produced from shallow streams of running water, free from mud, as the latter spoils the flavor; but it may also be cultivated in common garden soil, though the product is much inferior.

Most farms have one or two streams which could be utilized with little trouble, and the cutting and shipping would come at a time when regular work is slack. There are hundreds who add appreciably to their income this way, and with little increase of labor. Nor are they all farmers and market gardeners. Several women have gone into business by leasing all the running water and spring holes near their homes. These they stock with water cress, and often find it necessary to employ people to help cut and prepare the cress for market. New York and Philadelphia are very good markets for cress.

About Christmas time large quantities of water cress are sold at 25 to 75 cents per half peck. In spring and early summer it is still profitable and sold in great quantities, though at lower prices. The plant is an aquatic, and prefers cold running water in a muck loam soil, which is always accumulating along the banks of brooks.

In swamps where there are springs, but no steadily running water, it is necessary to dig ditches and drain the low grounds for the cultivation of the cress. Plant seeds or cuttings along the sides of the brook, and the plants will grow and thrive of their own accord, with no further care. Sometimes it is necessary to back up the water in the winter time by the use of artificial dams or gates to prevent the plants from freezing. Running brooks seldom freeze—a most important point—and there is no danger of the plants freezing if they are well covered with water. If cuttings are planted they should be trodden in the sandy mud, while the seeds need but to be thrown into the water. The plants seed in July and soon after "self-sow," making dense groups.

The cuttings begin about Christmas time, and continue all through the winter and spring, the beds yielding several crops, three or four weeks apart. When the plants begin to push their heads above the water they are cut with shears, about five inches of stems being clipped, care being taken to not destroy the roots. The plants, when cut, are packed in small baskets or crates and sold by the commission merchants like other vegetables. They are also frequently bound up in small bunches, but the loose cresses are usually preferred in New York markets.

If water cress must be grown in the ground, a shady, cool position should be chosen and the seed sown early in shallow drills, thinning the plants to six inches when large enough. The soil must be kept constantly moist by watering. In autumn some plants may be placed in pans and transferred to a warm house to keep up a supply during winter. The more the tops are gathered the better, as the plants are thereby induced to produce more.

Special shallow ponds, with appliances for drawing all the water off when required, are the best means of cultivation, but such a system cannot be followed in the majority of cases.

New York.

Shall Farmers Hold Their Wheat?

With all farmers who grow wheat this question arises: "Shall I hold my grain for $3 a bushel?" Some are doing this and that is why we all feel an interest in some figures recently made by George H. Johnston, a banker of Wales, North Dakota. After listening to many arguments in favor of such a course on the part of farmers who have wheat to sell in his locality, Mr. Johnston did what any banker would do, he took up his pencil and did some figuring.

Mr. Johnston prepared tables in detail, but for brevity only his totals are given here. In Table No. 1 the banker took the average monthly prices of cash wheat in Chicago for the 10-year period 1901-1910. He found that the average price in the six months July-December was 92.4 cents, and for the next six months (January-June) 93.5 cents. In other tables the banker showed that American farmers market 78 per cent. of their wheat in the six months period July-December, and 22 per cent. in the remaining six months. North Dakota growers, in whom he was particularly interested, marketed 75 per cent in the period July-December and 25 per cent. in the remaining months.

This leads Mr. Johnston to believe that it does not pay to hold grain. "These tables," he goes on to say, "show that for the years 1901-1910 the farmer who held his wheat until the six months period, January-June, received only 1.1 cents per bushel more than the farmers who sold shortly after harvest. This 1.1 cent would not come anywhere near paying for interest on money, shrinkage of grain, storage and insurance." Another set of figures based on farm prices for the years 1910 to 1919 shows the same price for the two periods—$1.29 a bushel in each instance. "In the past 20 years," continues the banker," the North Dakota farmer who marketed his wheat in November and December made more money than the one who held his wheat until spring."

An Overcoat for Strawberries

To carry strawberry plants through the winter without loss it is necessary to mulch the beds before severe winter weather comes, according to the Department of Horticulture at the Ohio Experiment Station.

Alternate freezing and thawing will lift unmulched plants partly out of the soil, while the wind during an open winter or spring kills the plants.

Even though a hardy plant, the strawberry should have protection. Swamp hay, leaves or straw may be used for mulching. Coarse manure is also suitable.

The mulch need not be removed in the spring, but may be placed between the rows of plants to serve further for saving moisture.

Johnny Appleseed's Mission

"Johnny Appleseed," the eccentric wanderer, who influenced the planting of pioneer orchards and aroused horticultural interest in the early development of Ohio history is also responsible for the introduction of many medicinal herbs into the state, according to old reports secured by the Ohio Experiment Station.

He is known to have scattered the seed of hoarhound, dog fennel, catnip, pennyroyal and other herbs.

For 46 years, from 1801 to 1847, Johnny Appleseed traveled over most of central and northern Ohio and parts of Indiana, planting apple and herb nurseries, often giving away trees and scattering the seeds of medicinal herbs about the homesteads of the pioneers.

"Busting" the Boulders

ERIC V. DISBROW.

A short time ago I cleared an acre of clay loam soil, blasting out some fifteen granite boulders and one green apple stump. The boulders ranged in weight from 500 pounds to the largest, which would probably have scaled eight tons. Twenty-five pounds of 40 per cent. ammonia nitrate dynamite did the entire work, which consisted of mud cap, snake hole and drilled shots.

Some of these boulders were flat, but the majority were egg-shaped, with the large end embedded in the ground. All were dug around previous to blasting. This greatly aids in securing good breakage and is worth the extra trouble. Those not over 2 feet in thickness were broken by mud-capping, placing the charge on a flat surface and covering it with a heavy coat of clay. The smaller egg-shaped stones were thrown out by snake-hole blasts placed under and directly against the bottom surface. Generally one such blast threw them out and broke them, though once or twice a mud cap was necessary to shatter the larger fragments.

Only three necessitated drilling, two rounded boulders and a large one which was over 4 feet in diameter. This latter I attempted to shatter with a snake-hole shot of 10 half-pound sticks of dynamite. The boulder did a beautiful standing broad jump, but aside from having one slab knocked off, was undamaged. A drill hole sunk to its center and loaded half full of dynamite did the work, however, and gave me twelve drag loads of stone to draw off.

In regard to mud-capping and snake-holing large granite boulders I would recommend the use of a straight 50 per cent. nitroglycerine dynamite in place of the ammonia nitrate powder. While it requires more careful handling and produces "powder headache" sooner, its violent shattering action makes the nitroglycerine dynamite the most economical explosive. The actual cost at that time ranged from 20 cents (drilled shots) to $2 per rock on the big ones; this covered powder, caps and fuse.

Three sticks of dynamite placed deeply and directly under the apple stump took the whole affair out very neatly.

Summing up the whole undertaking, $10 more than covered the explosive end of the proposition. Working alone and at odd times I probably put in four days from digging around rocks to the actual blasting of them. Two days more work with the team would account for drawing off the stone. In my estimation dynamite is as much of a farming necessity as are shovels, sledges, gads and stone drags, and one certainly gets lasting results when he applies dynamite to boulders.

New Jersey.

Our Experience Pool

We pay $2.00 for the best, $1.00 for the next best, and 50 cents for each other article published in our Experience Pool. All our readers are invited to contribute their experience on the topic in discussion and suggest subjects for discussion. Contributions must reach us 15 days before date of issue.

TOPIC NO. 1307, JAN. 15.—Stump pulling vs. stump blowing. Please give us your experience, or that which has come under your observation, on either or both sides of this moot question, being sure to state the *conditions* under which the particular work was done.

TOPIC NO. 1308, FEB. 1.—"My most helpful books on farming subjects—and why?" Many of us want more books on agriculture than we can afford and must make careful selection to get the most practical value for our money. It will help us to know what books have helped our brother farmers and just what sort of stuff is in 'em that has proved useful. Also please tell what government or state bulletins have been most useful.

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The Women's Exchange

This is the farm women's *own* department—*for* them and *by* them. It is devoted to the discussion of topics of everyday interest to the women of the farm family. The Practical Farmer invites—and expects—you not only to write your experiences on the topics under discussion but also to propose topics for future discussions. The best letter published herein each issue will be awarded a prize of one dollar, and for each other letter published we will pay fifty cents. Address
WOMEN'S DEPARTMENT, THE PRACTICAL FARMER, PHILADELPHIA, PA.

JANUARY 15.—Several subscribers are asking for information about cheese making at home. Who can give us directions from personal experience for the making of one or more kinds of cheese at home? Be brief but explicit, please.

FEBRUARY 1.—Renewing and "fixing up" furniture. A subscriber asks for help in this direction from the experience of other farm women. Most of us have had some experience and learned some lessons in our attempts to prolong the life and restore the beauty of our household furnishings. Let's hear about it!

Get your contribution in early. If it does not reach us at least 15 days before the date of issue, it will be too late.

A Merry Christmas for the Sweet Tooth

Mrs. J. B. B., Coudersport, Pa.—As Christmas is primarily a children's day, the question of goodies is viewed from this standpoint. Candy is necessary for the Christmas tree, but may be made at home in this manner: Beat the white of one egg until it begins to foam stir into it confectioner's sugar to form a soft dough. Into this work all the ground peanuts the dough will contain. You may divide the fondant into three parts; fill the second part with dessicated cocoanut and the third part with chopped raisins, figs, dates and nuts.

For the Christmas dinner table erect a cob house in front of the host, of brown bread cobs dipped in melted chocolate, which he serves with the celery soup.

To accompany the meat course, remove the core from large King apples, polish the skin, insert one-half of a banana cut crosswise, or a mold of cottage or cream cheese to imitate a candle, fasten a candied cherry to the tip for a light.

For the salad, line a cereal dish with boiled spaghetti or vermicilli for a bird's nest, fill with olives and serve with a pitcher of mayonnaise dressing.

Line the round gem tins with puff paste and fill with the following mixture: Grate four raw carrots and the outside peel of one orange; add one cupful of sugar, yolks of three eggs beaten, three cupfuls of rich milk. Bake in slow oven. Cover with a meringue made by beating the three whites of eggs to a stiff froth and stirring in three tablespoonfuls of sugar. Place in hot oven to set.

Fill gem pans with the following cake mixture: Cream together one cupful of butter or pork fat, add one-half teaspoonful each of cinnamon, ginger, cloves and salt, put one teaspoonful of soda into a cup of sour apple sauce and beat thoroughly; add two cupfuls of flour and one cupful of raisins dusted with flour. Bake 45 minutes in moderate oven. Cover with icing and put a red candle, smallest size, on top, to be lighted when the cakes are brought to the table. Serve on bread and butter plates.

When all have reached their places at the table the host may recite this form of grace: "For the birthday of our Lord and Saviour, Jesus Christ, and the food Thou hast provided, Our Father we thank Thee."

Mrs. F. W., Westfield, N. Y.—Christmas would hardly be Christmas without a few little extras in the way of special cakes and candies, for the grown-ups as well as for the children.

So, now that sugar is plentiful again, and the price sufficiently reduced so that we feel we can use a pound or two more on a special occasion without mortgaging the farm to pay for it, let us have a few Christmas goodies.

There are *little cocoanut drop cakes*, easily made, and good to eat: 1½ cups of sugar, ½ cup of butter, 1 large egg, ½ cup of thick sour cream sweetened with ¼ teaspoonful of soda, ½ cup of sweet milk, 1 cup or more of cocoanut, 1 teaspoonful of vanilla or lemon flavoring, 1 teaspoonful of baking powder, and flour to make a stiff dough. Drop in teaspoonfuls on buttered tins, and flatten out with a knife dipped in cold water.

Then there are the well-known *hermits*, which, with their spice and raisins, remind us of fruit cake; the crullers rollled in powdered sugar and the glorified ginger bread, with maple or chocolate or orange icing.

The *gelatine candies* are rather new for the home candy maker, but are really not difficult to make, and take less sugar than most kinds. One recipe will give the idea, and it can be varied to suit one's taste: Soften 2 tablespoonfuls of gelatine in ½ cupful of cold water and add the juice of one lemon and the juice and grated rind of one orange. Heat one cupful of sugar in ½ cupful of water, and when it boils add the gelatine and fruit juices. Boil for ten minutes, add 1 cupful chopped raisins or figs and boil for ten minutes more. Stir constantly. Add 1 cupful chopped peanuts or other nuts just before taking from the fire, and pour all into a shallow buttered pan. Let stand over night, cut into cakes or bars, and roll in powdered sugar. This may be simplified by omitting the nuts, or raisons, or both..

Mrs. J. C., Ethridge, Tenn.—If we have raised plenty of pop corn and peanuts, and have a supply of sorghum molasses with a few walnuts, hickorynuts some extra fruit and a small amount of sugar we can prepare some toothsome dainties for Christmas.

Old-fashioned pop corn balls are made by heating molasses into candy, and while warm pour it over freshly popped corn and shape into huge balls with the hands.

Peanut molasses squares may be made at home as well as in the factory. Boil molasses until a drop in a saucer of water, after cooled, knocks hard on the saucer. Before pouring out stir in a goodly quantity of roasted peanuts that have the red hull removed. Pour in a greased platter, and when partly cool cut into squares with a wet knife.

Sugared peanuts are delicious and are prepared by boiling sugar and a little water until it strings when dipped on a fork. Have a dish of freshly roasted peanuts with red hulls removed at hand. Pour the syrup over these and stir all together. Drop in lumps on wax paper.

To prepare *salted peanuts*, blanch raw peanuts, after shelling, in hot water to remove red hull. Pour this into a frying pan of hot fat, salt well and stir until browned.

Fruit balls may be made of watermelon rind preserves or any fruit desired, by rolling in chocolate icing and placing on wax paper to dry.

Crystalized fruit and flowers are a nice change. Take rose or violet petals, thin slices of orange or pineapple, or mint leaves. Let fruit dry a while to evaporate juices. Wash flower petals and place on a towel to dry. Drop these, one at a time, in sugar syrup that is brittle when dropped in cold water. Remove with fork and place on wax paper to dry. More sugar may be sprinkled on. Calamus root or sweet flag may be treated this way if one likes it.

Delicious chocolate fudge may be made by using two-thirds sugar and one-third sorghum molasses. Always use half as much grated chocolate or cocoa as you have sweetening. Moisten well with sweet milk, add a pinch of butter and boil until a drop in cold water hardens. Remove from fire, dash in a teaspoonful of vanilla and beat well. Pour on buttered plate and cut in squares before it gets cold. Nut meats of any kind may also be stirred into this. If we have not our own sorghum, Karo syrup is ideal.

Miss A. E. D., Williamsport, Md.—If the materials used in candy are pure, it possesses no little food value. The evils resulting from its use may usually be traced to overeating, or eating at ill-timed hours. If we are to be safe on the point of purity and wholesomeness in the candy we eat, it is best to know the nature of all ingredients used. And then learn to put them together successfully for ourselves. Following are a few good recipes:

PUFFED RICE CANDY.—One cup sugar, ½ cup cold water, ½ teaspoonful of salt, 2 tablespoonfuls of vinegar. Boil 5 minutes, add 2 tablespoonfuls molasses and boil until it hardens when tried in cold water. Add a lump of butter. Remove from the stove and stir in 1 box of crisped puffed rice. Pour on buttered tins and cut in squares.

COCOANUT CANDY.—1½ cupfuls dried cocoanut, 1½ cupfuls milk, 2 cupfuls sugar (granulated), 1 teaspoonful of vanilla extract. Put cocoanut into a saucepan, add sugar and milk; boil for 12 minutes, stirring occasionally. Remove from fire, add extract and beat briskly with a wooden spoon until it begins to thicken, then pour into buttered pans, and when cold cut into squares.

TAFFY A LA BLOOM.—2 tincupfuls of granulated sugar, 1 tincupful of cold water, ½ teacupful of vinegar, lump of butter the size of a walnut, vanilla. Cook without stirring until brittle when tried in cold water. Cool, pull until white and cut into small pieces with a knife or pair of scissors.

Miss M. E. F., Bridgeton, N. J.—Without fruit cake Christmas would be incomplete. Here is a recipe for fruit cake made without butter, eggs or milk. Eggs at this season are more of a luxury than sugar. Recipes which require no eggs are really more economical than recipes with little sugar.

FRUIT CAKE.—One cup brown sugar, 1-3 cup lard, 1 cup cold water, 2 cups seeded raisins, 1 teaspoonful cinnamon, 1-3 teaspoonful cloves, ¼ teaspoonful nutmeg, pinch of salt. Mix ingredients, place in saucepan on stove and allow to boil three minutes. Remove from fire and when cold add 1 teaspoonful of soda dissolved in hot water, 2 cups sifted flour, ½ teaspoonful baking powder. Bake in a moderate oven.

BUTTER SCOTCH.—Five tablespoonfuls molasses, 4 of sugar, 4 of water, 2 of butter. Let boil until brittle when dropped in water; pour in buttered pan.

M. S. P., Manhattan, Kan.—Minimum amounts of sugar will yield a maximum amount of satisfaction if applied according to the following recipes.

CHOCOLATE CARAMELS.—2½ cupfuls sugar, ¾ cupful corn syrup, ½ cupful butter or substitute, ¼ teaspoonful of cream of tartar, 2½ cupfuls milk, 2½ squares of chocolate, 1 teaspoonful of vanilla. Put sugar, syrup, butter, or substitute, cream of tartar, and 1 cupful of milk over the fire. Stir constantly until the mass boils. Then add remainder of the milk very gradually. Stir occasionally during the cooking to prevent sticking. Cook until a little of the mixture will form a hard ball when dropped into cold water. Add melted chocolate and vanilla. Turn into a greased tin. When nearly cold, mark into squares. Wrap squares in oiled paper. The addition of a cupful of chopped nuts makes delicious nut caramels. Omission of chocolate gives vanilla caramels. The product of this recipe will well repay for the time and trouble required to produce it.

MOLASSES TAFFY.—One cupful molasses, 3 cupfuls sugar, 1 cupful hot water, 1 tablespoonful vinegar, ½ teaspoonful cream of tartar, ½ cupful of butter or substitute, ¼ teaspoonful of soda, ½ teaspoonful of flavoring. Mix sugar, molasses, water and vinegar together. When this boils, add cream of tartar. When nearly done add butter and soda. Cook till it cracks when a little is tested by dropping into cold water. Pour into greased tins. When cool enough to handle, flavor and pull.

GLACE FRUITS AND NUTS.—Two cupfuls sugar, 1 cupful water, ⅛ teaspoonful cream of tartar. Boil ingredients together until the syrup changes to a golden color. Stop boiling at once by placing kettle in a pan of cold water. Then put in hot water or over a slow fire while dipping. Reheat glace as it hardens, adding a little hot water, if necessary. Drop nuts, two or three at a time, into the syrup. Remove with a fork and place on oiled paper. Fruits may be done in the same way. The latter must be perfect, having no breaks in the skin, and can only be kept a short time.

CHOCOLATE MACAROONS.—One can of condensed milk (15-ounce size). Evaporated milk will not do. Two squares of chocolate, melted, 3 cupfuls dry shredded cocoanut. Add milk to chocolate, stir in cocoanut. Drop by spoonfuls on to lightly greased tins. Bake in a very slow oven until slightly dry on the outside. Cool. Then place in a tightly covered receptacle.

These are recipes I have used many times, and, thus far, I have found no others so good.

Miss H. S., Wales, Mass.—To make good candies at a moderate expense has been quite a difficulty for me, but in the past few years I have collected some rules which are really excellent, both in eating qualities and freedom from failure.

The best fudge I know of is as follows: Two cups white sugar, 2 tablespoonfuls grated chocolate (cocoa may be used), 2-3 cup of milk and 1 tablespoonful of butter. Boil this mixture until it will form a soft ball when dropped into cold water. Take from fire and add ½ teaspoonful of vanilla and beat a few minutes, then pour into a buttered tin.

POTATO CANDY.—One small white potato boiled and mashed, 1 cup of walnuts chopped, add enough powdered sugar to make a stiff paste that you can handle easily. 'Roll on a board dusted with the sugar and cut into squares. I find that it is better not to have the potato too warm when making the candy, as it does not take so much sugar to make a stiff paste as a very warm one does.

BROWN SUGAR FUDGE.—Two cups of brown sugar and ½ cup of milk boiled until it will form a soft ball when dropped in cold water. The candy is much better if a small piece of butter is added to the sugar and milk before cooking. Raisins or nuts may be added just as the candy is finished cooking.

STUFFED FIGS.—Steam whole figs until tender and after cutting a slit in the side press a marshmallow into the opening and roll fig in powdered sugar.

CANDIED GRAPE FRUIT PEEL.—Cut the peel in strips about ½ inch wide and cover with plenty of cold water and bring to a boil; drain and repeat the process six or seven times. Then drain and measure peel and allow an equal amount of sugar. Put on stove and boil until syrup almost threads. (A little water may be added if necessary to make the syrup.) Take each piece of fruit with fork from syrup and roll in granulated sugar and place on platter to dry. It is best to keep it tightly covered until it is all eaten, because it hardens when exposed to air.

DELICIOUS WALNUT CREAMS may be made by mixing powdered sugar with the white of an egg and flavored with vanilla or other extracts. The mixture should be stiff enough to roll into balls about the size of a marble. Press a walnut meat into two sides. These creams may be colored with cake coloring or other materials and make a very pretty Christmas box without any other kind of candy.

SUGGESTIONS FOR COLORING if one does not care for the cake coloring: Cocoa for brown, the yolk of an egg for yellow; pink sugar or fruit juices for the pink ones.

B. T. W., Wyoming, Del.—Every year I make several boxes of candy and give to friends. I have used the following recipes for years, and with excellent success:

DOLLY'S DELIGHT.—Two cupfuls of white sugar, ½ cupful of table syrup, ½ cupful of water, the whites of 2 eggs, ½ cupful each of chopped walnuts and dates. Mix sugar, syrup and water together thoroughly and cook slowly until it hardens in water. While hot, pour in the beaten whites of eggs and stir until thick. Add nuts and dates and beat until it begins to set. Drop by spoonfuls on to buttered paper.

WALNUT CREAM CANDY.—Two cupfuls of sugar, ½ cupful of water, pinch of cream of tartar, 1 cupful of chopped black walnut meats, 1 teaspoonful of vanilla extract. Without stirring the mixture boil the sugar, water and cream of tartar together until it forms a soft ball when tried in cold water; take from the stove and set in a basin of cold water for three minutes. Beat until creamy and white, then add the vanilla and nuts. Pour into buttered pan and cut in squares.

PEANUT BRITTLE.—Shell 1 quart of nuts and break in pieces of desired size, cover the bottom of a plate with them. Put a pound of sugar into a clean saucepan. Stand it over a brisk fire, stir and shake until the sugar is thoroughly melted and looks like golden syrup. Pour over the nuts in a thin sheet. When slightly cool break into pieces.

CREAM PEPPERMINT.—Put into a perfectly clean saucepan 1 pound of granulated sugar, a saltspoonful of cream of tartar, half a pint of water. Stir over the fire until the sugar is dissolved. Then with a clean, damp cloth wipe down the sides of the saucepan, and boil continuously without stirring until the mixture hardens and becomes brittle when dropped in cold water. Pour on a slightly oiled platter; when cool enough to handle pull until white, cut in pieces. Put in a tin box lined with waxed paper; stand aside until creamy.

BEST EVER FUDGE.—Melt ¼ cupful of butter, add 1 cupful of white and 1 cupful of brown sugar, ¼ cupful of molasses, ½ cupful of cream. Boil two or three minutes, stirring rapidly. Add two squares of chocolate, grated or scraped. Boil five minutes, stirring rapidly at first, then more slowly. Remove from fire, add ½ teaspoonful of vanilla. Beat until it thickens, pour into buttered pan and cut in squares. I usually put English walnuts on top of some of the squares, while it is still hot. A vanilla fudge made like this has the chocolate omitted and 1½ teaspoonfuls of vanilla added last.

Last, but not least is *Fondant*, of which so many varieties of sweets can be made. Two cupfuls of granulated sugar, ½ cupful of boiling water, ½ teaspoonful cream of tartar, ½ teaspoonful of glycerine. Stir, place on range, boil rapidly without stirring, until a jelly-like ball is formed in cold water. Pour into a bowl, cool slightly, then stir and beat until white and creamy. Turn on to a plate and knead until smooth. Place in a bowl and cover with a moist cloth. After 24 hours all the various bonbons and chocolate creams may be made, using fruits and nuts as your ingenuity suggests.

These recipes are all tried and proven many times.

Mrs. N. W. W., Port Crane, N. Y.—I want to tell you about potato candy first. Of course, you have seen it mentioned many times, but if you have not actually made it, try this rule. In our Home Bureau booth two seasons ago at our fair, I displayed some potato candy fondant, and it was adjudged just right by those who sampled it. Three tablespoonfuls white or sweet mashed potato, mashed fine and smooth any time, either left from dinner, or, to my mind better still, a warm potato mashed fine without any milk or butter added, as the potato is not for flavor, but merely to moisten the sugar, is our rule. Three tablespoonfuls of this potato will entirely take 2 pounds of the very finest XXXXX sugar, and the mass should be kneaded and worked until not a lump remains, and not a grain of sugar is left dry. Sweet potato may take a little less sugar, probably will. I like sweet potato immensely for this fondant. The slight creamy tint is not objectionable. When the dough is ready roll it in waxed paper and work it up later if you prefer. It will not harden if treated so, and the tiniest bit of mashed potato worked into a drying lump will moisten it unbelievably.

My favorite combination is this fondant flavored and colored with maple flavor, a raisin rolled inside a round of it and a nut meat on each outside pressed on firmly. Wintergreen with pink coloring, peppermint with pale green, cocoanut without any other flavoring added, and plain vanilla creams di ed into melted sweet chocolate in which a teaspoonful of paraffine has been blended, makes a mixture of delicious candies that are variegated enough to please most people.

An economical way to make this candy, and less work for one person alone, is to work as much sugar into just one tablespoonful of mashed potato as it will take to make a paste just right to handle easily. Flavor, color, and dip these candies one way, then make up another lot some other time. This usually is my rule, as I have no daughter to help me, or small girlie to delight in the game.

The old rule fondant was half a cup of hot water on two cups granulated sugar, boiled without stirring until it soft-balls in cold water. Put this on a platter wet with cold water, and when it is cool enough underneath to hold the palm of the hand on without discomfort, beat it constantly with a wooden spatula (butter ladle is good) until it is right to be handled, and proceed as for any fondant, forming, coloring and flavoring it to suit taste. I made pounds of this fondant for our Sunday School at Christmas one warayear when we wanted to save expense. One neighbor made the white corn syrup fondant and this is delicious, I put Malaga grapes into some of my candies that time. Everybody liked them well.

When making common fudge add a couple of teaspoonfuls paraffine just before taking up, and then beat until ready to spread in tins. This adds to the consistency of the candy in a pleasing way, and when raisins or nuts are used does not crumble as does some fudge without it. I use water, not milk, in making fudge.

Mrs. D. L. T., Fine Creek Mills, Va.

CONSERVED PEARS WITH NUTS.—Slice pears one-quarter inch thick and preserve them, using 1 pound of sugar to 1 pound of fruit. When done, take the fruit out and let it drain and cool. Line tin boxes (Nabisco or ginger boxes will do) with waxed paper and fill them with alternate layers of fruit and black walnut kernels. Lay several thicknesses of the paper on top. Close the boxes, wrap them in waxed paper and put them in a cool place until needed. These make attractive gifts, besides being delicious and economical, for the same syrup may be used to preserve more fruit.

Homespun Yarn from Ithaca

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Odd Jobs are Easy with Proper Tools

There are dozens of odd jobs of farm carpenter work which can be done during the winter months if the farm has a shop equipped with a few necessary tools. Without the tools, the work is almost impossible, or at least will be so tedious as to be discouraging.

The tools needed have been listed by the farm mechanics instructors at the New York State College at Ithaca, N. Y. They further suggest that it will help in keeping track of the tools if a rough outline or picture of each tool is painted on the wall where each tool is to hang. This is said to be a much more convenient method than keeping the tools in a box or chest.

The following is a complete list of farm carpentry tools: 1 26-inch crosscut saw, 1 26-inch rip saw, 1 jack plane—14-inch with 2-inch cutter, 1 carpenter's draw knife, 1 marking gauge, 1 8-inch square, 1 mallet, 1 saw set, 1 set of auger bits—4-16 to 16-16 inch inclusive, 1 expansion bit, 1 ratchet brace, 2 screwdrivers—1 large, 1 small—1 countersink, 1 steel rafter-framing square, 1 pair pliers, 1 10-inch flat file, 1 auger bit file, 1 8-inch triangular file, 1 6-inch slim tapered triangular file, 1 12-inch half-round wood file, 1 8-inch oblong carborundum oil stone, 1 16-ounce straight claw hammer, 1 24-inch carpenter's level, 1 putty knife, 1 nail set, 4 socket firmer chisels—¼ inch, ½ inch, 1½ inch, 1 2-pound 2-ounce bench hatchet, 1 2-foot four-fold boxwood rule, 1 cross-cut saw tool, 1 pinch bar, 1 spoke shave, 1 screwdriver bit, 1 pair 8-inch winged dividers.

Bean Growers Co-Operate Profitably in Marketing

Not wooden shacks, but permanent structures of stone mark the prosperity of Mountainair, N. Mex. No oil has been found, nor yet rich mineral deposits. The community has simply struck beans!

Although pinto beans have been grown in New Mexico for a good many years, where the industry was spasmodic and unorganized, it was not until a year or so ago that the possibility of greater profit was realized. The field representative of the Bureau of Markets, United States Department of Agriculture, informed the growers something of what had been accomplished by co-operative marketing associations throughout the United States, and assisted them in organizing the New Mexican Bean Growers' Association, which now embraces 14 local associations.

It has been conservatively estimated that as a result of co-operative selling $75,000 of additional profits were earned by the pinto bean growers last year, and that they saved $7500 alone through the co-operative buying of bags in carload lots. With a larger margin of profit for the efforts exerted by the producers, the future of the industry seems assured. Pinto beans are now being sold at 25 cents per hundred pounds in carload lots over quotations on C. H. P. navies.

Cabbage lice often live over winter on old heads and stumps in the field. When they have been troublesome it is a good plan to collect and burn the old stumps.

A Girl Named Mary

By JULIET WILBOR TOMPKINS

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CHAPTER VI.

They left the theater heavily and in silence. The thrill was gone from their secret, and Marise hurried her child through the crowd, nervous lest Mrs. Healy might be waiting outside to cast her grim shadow on their departure. Mary, too, was stealing quick glances in every direction, but whether in dread or desire, her mother could not tell. Marise, having a hand on her arm, felt the leap of the girl's nerves when a voice spoke her name.

"Well, Miss Mary!" A swarthy, chubby young man with the hearty manner of a leading citizen and a generally oiled appearance was shaking Mary's hand in benevolent greeting. "Well, well! Having a party? Splendid! First rate! How's mama? And where is the lucky fellow that brought you?"

If Mary would rise from the dead to talk about the office, it was also evident that no mortal trouble could hold her down in the presence of enthusiastic male attentions. She came up smiling so joyously that the young man in the balcony seemed to fade from the situation. He must have been merely an unrelated accident.

"Mrs. Jaffrey, I want to make you acquainted with Mr. Peavy, Mr. Al Peavy," she said with importance. "I told you about him.

"Now—now—now—what did she tell you, Mrs. Jaffrey?" Mr. Peavy was giving Marise's hand the same prolonged treatment. All the lines of his face were horizontal, and he beamed like a moist brown sun. "No fair. I want to know. If she said I was one of nineteen suitors for her hand—and about third from the bottom—she'd come pretty near the truth."

Marise wanted desperately to be friendly, to hide the appalled drop of her spirit before this new test, but she could not think of anything to say. Mary, however, had no such difficulty.

"I told her you were a press agent, but not a very successful one, of course," she threw off.

He appealed to Mrs. Jaffrey. "Isn't she the worst? Isn't she a young terror, though? Mrs. Jaffrey, it has been my fortune to know all sorts and conditions of men and women. I've talked with presidents, I'm pals with a Chinaman who keeps an opium den, I taught one season in a district school and led the choir—I've sampled human nature pretty much in every direction and I never met any one who could get the best of me like Miss Mary Healy. I'm a child in her hands."

"If you were a child in my hands," Mary declared, "you'd be a lot better brought up."

He crowed and snorted with appreciation. "You're the cutest! You're a perfect fiend, you know. I can't let you get away on that. In half an hour or so, I'll think up a repartee. I'm slow, but I get round to it. Mrs. Jaffrey, there's a joint right next door where the head waiter knows me. If you and Miss Mary would do me the honor—"

Mary had turned eagerly for her assent; something must be done. Marise could not quite face the restaurant, but she wanted above everything to keep Mary happy. The wish shone out of her in a touching graciousness.

"Won't Mr. Peavy come home with us instead?" she suggested. "There are sandwiches waiting for us, and I have a taxi out here."

Mary looked disappointed, but Mr. Peavy was charmed. He found their taxi and put them in with super-knowing skill. The very way he pulled down the extra seat had finish, an air of one born to taxicabs. Seated, he clasped both hands over the end of his stick and looked at the two ladies in rich satisfaction.

"It's better to be born lucky than to be born handsome," he observed. "Of course, some are born both—like Miss Mary."

"Where does the luck for me come in?" Mary wanted to know.

"Oh, you're rare! You're too much for me." Mr. Peavy gave her up. "Mrs. Jaffrey, I'm going to talk to you. I can't keep up with Miss Mary. I'm no wit. I'm just a plain, middle-class American citizen. I live in this glitter and glare, but underneath I'm only a home boy." His chest expanded with his theme. "I've got an old mother that I think the world of, and she's queer enough to like me. I get out there every Christmas, whether I can or not. No matter what you offer me at that time—no, sir. That dear old lady isn't going to be disappointed. I write every week, and my little wad keeps her going, and if ever I'm a decent chap when I might be something else, I owe it to that good woman's love and prayers. And I'm not ashamed of it."

He really meant it. His little brown eyes were almost moist. He was undoubtedly the excellent son he saw himself; it was a good face. Marise's courage nearly died before the problems of the future. She had made it her life lesson that she must accept Mary as she was, but she had not thought to prepare herself for Mary's husband. It was one thing to love and serve her fellow men in the great abstract, but quite another to have this complacent person displaying his oily virtues in her cab, and possibly in her family. A bitter thought that Hugh was right, and that commonness was something to be hated, rose to confront the creed she had followed through long difficult years. If she could only hear Hugh assert it, she could fight him, and so find her way back to the serene heights of human brotherhood on which she had labored. But Hugh had abandoned her, and she was miserably lost. She had taken many hard journeys for Mary's sake, but this trip up-town with Mary beside her was not the least of them.

Hannah, opening the door, murmured some announcement, but Marise was too preoccupied to heed. She turned to the drawing room, but stopped short in the doorway with a frightened sense that what she saw was too good to be true. Hugh was sunk deep in his chair, as though he had been there for a long time, and for a moment before he rose, his eyes, somber and unwilling, looked straight into hers. "Well, I'm here—I'm back!" they accused her, and hers might have cried to him, "I'm glad!" if she had not so taught them to hide.

Glad! She was glad like the shipwrecked who sees the sail; her gladness was a divine tide of youth, pouring throug all her waiting body. She was so strong, so light and fearless, she came so triumphantly to him across the big room, that Hugh's melancholy gave way to wonder, and there was a thrilled response in his rising.

"Well, Hugh!" It was marvelous that she could speak so composedly with this riot of happiness just under her voice. "So you came."

"Oh, yes—I came;" he had a weary derision for himself.

"Have you been here long?"

"I don't know." He looked vaguely about at the furniture, as though it might have kept some record. "I was at an infernal dinner as long as I could stand it—and then I came."

Mr. Peavy had been relieving Mary of her coat with his masterly style in such matters, and he now came forward at her side, looking about the room with a connoisseur tilt of the head that seemed to say, "Good—very nice indeed—interesting—on the whole, unusually well done!" Marise had forgotten that he was a menace and that Mary presented difficulties. Her dear baby was found, and Hugh was going to be told about it, and all was exquisitely right with the world. She held out her hand to her child.

"Mary dear, come and meet Mr. Le Baron," she said.

Hugh had been startled by the name, or by the hidden song just under it, and he looked closely into Mary's face, shaped by family lines that he well knew. Of course, he did not actually guess the stupendous truth, but he felt mysterious currents in the air, hovering secrets, and his being tightened to a new alertness as he took the girl's hand.

"But Miss Mary who?" he demanded.

"Mary Healy;" it was Mary who spoke, hastily, even defiantly, but Marise could not be hurt by anything just then; for Hugh had come back. She was overlooking her other guest, but Mary introduced him with the satisfaction of one who plays a leading trump; "Mr. Peavy—Mr. Al Peavy."

Mr. Peavy made Mr. Le Baron heartily welcome, and immediately identified him as the architect of the new Forty-ninth Street Theater.

"My profession, of course, has put me in touch with all the best theaters of the country," he explained, beaming his good will straight into Hugh's reluctant eyes. "I'm here, there, everywhere; it has been my fortune to spend several years in the second cultural city of the United States; so, when I saw the new Forty-ninth Street I was qualified to appreciate it. I wrote a paragraph about it when it opened with *Honor Bright*. I remember I spoke of its admirable restraint and classic feeling—I gave it quite a puff. You may have read it at the time."

Marise was looking on in humorous apprehension, for Hugh's manners were not to be counted on, and she knew she might have to make a quick rescue; but Hugh met the onslaught with nothing more hostile than a vague sound in his throat. His attention was fixed on Mary Healy. When they were seated about the dining-room table, he took pains to draw her out. Marise abetted him, and with Mr. Peavy applauding and marveling at her, Mary found herself gloriously restored to her rightful place. She was once more the leader, the little queen. She had forgotten that she had a trouble in the world as she let them look on at the mighty fun of being Mary Healy.

"I like to go to the theater, but it's awful to act," she told them. "Having to play you're some one else—I don't know—it makes you sort of ashamed and mad."

Mr. Peavy insisted that playing a part was a woman's favorite occupation, but Marise understood the hot young pride that found even posing before a camera an indignity. She liked her Mary! She might frequently want to shake her, but she respected the girl's force and felt the charm of her audacity. Mary's beauty had a ripe glow that held her eyes. She was too strongly built for grace, but she had a boy's bodily freedom, and her blouse of pale pink crepe outlined splendid shoulders. Marise turned to Hugh for sympathy in her content, but he had eyes only for Mary.

"I think you would act Miss Mary Healy very well," he said. "I can't seem to see you in any other role."

"The only time I ever made a hit was in the death of Little Eva," she began, then paused surprisedly at their burst of laughter. "Oh, well, I wasn't so husky when I was a kid," she explained. "They gave *Uncle Tom's Cabin* for the benefit of the church or something, out at home. I was on the sofa, dying, and they were all around me singing, 'Eva, Eva, she's passing away'—you know the scene. Well, I was so afraid I'd cry that I made a face at them. Lawsy, but it brought down the house!"

They would have laughed if Mr. Peavy had not so squealed and shouted.

"One touch of nature," Hugh murmured. "What did you think of tonight's play?"

"Too much cigarettes," was the emphatic answer. "That's all right in a rough play, but those were supposed to be ladies. It wasn't true to life."

Her sledge-hammer finality amused Hugh, but Mr. Peavy smote the table with a fat brown fist.

"That's the sort of thing I like to hear a girl say," he declared. "I tell you, Mrs. Jaffrey, when a man's business takes him among chorus girls and theatrical stars—and I know them all, top-liners and supes, and they call me Al and think I'm a pretty good fellow—but sometimes it leaves me just plain lonely for the nice, modest, home-made kind of girls that you can take some pride in showing to your mother. That's what we all really like best."

Mr. Peavy's confidences and the insistance of his eyes in meeting hers left Marise oddly embarrassed, as though she were in the presence of some one who could not be trusted to keep on his clothes. For Mary's sake, she smiled encouragement, but it was a relief to have Hugh pick up the main conversation and set it going again. The blessedness of having him there!

"I want to hear more against the play," he said. "The theater is never true to life, Miss Healy. Hit it again."

Mary was only too happy. "Well, there was that typewriter girl; she couldn't have held her job a week in a real office."

Hugh enjoyed that. "Why not?"

"Oh, she never could have worked up any speed, using her hands in that fancy way. And no girl with sense enough to buy a ticket on the subway is going to be taken in by a big stiff like that broker. There was one of his sort in my first office, and we liked him about the way we liked poison."

"Girls do get taken in," Hugh reminded her.

"Oh, yes;" Mary was heavily sarcastic; "that's their favorite indoor sport, according to the vice commissions and the movies. The millions that just go quietly about their jobs—you never seem to hear about them. There's a bunch of girls and fellows in my office, but you couldn't get a play out of them to save your neck. They just support their mothers and do up their blouses and keep an eye out for a husband. Pretty tame!"

Her scorn made them laugh.

"Where is this model office?" Hugh wanted to know.

"Engel and Weeks;" Mary tried not to say it too proudly. Hugh knew both her employers, and rejoiced in her characterization of them until an arresting thought checked him.

"Look here—those proper young women in my office—do they talk like this about me"?

Mary had only pity for his ignorance. "Well, how did you suppose they talked?"

"With distinguished consideration and respect!"

"I don't think," Mary added. "Not at eight to sixteen per."

Hugh turned to share his amusement with Marise, and again he saw something that gripped his attention. Marise was watching Mary with lighted eyes that had forgotten to hide their secret; she was glad of her girl, indulgent, ready to be definitely tender when Mary should let her in. It was a mother's look, and it sent a visible shock through Hugh. Pushing aside plate and glass, he watched them both with new intentness.

"Well, you know, Mr. Le Baron, it's natural," Mary was explaining with a consoling inflection. "You have to be so respectful to their faces that you sort of take it out on them after hours. You may like them a lot, but you have to balance things up if you're a good American."

"A 'good American'—with the name of Healy," said Hugh deliberately.

Mary could again feel the joke of their secret. She sent a quick glance to meet her mother's smile as she made demure answer: "Well, my parents were born in this country."

Hugh had seen the look. He rested an elbow on the table and his hand closed tightly on his chin as he studied the face opposite.

"I think," he said slowly, like one feeling his way, "that perhaps you had a very unusual mother."

Mary flushed crimson, and the color was reflected in Marise's averted face. Mr. Peavy seized the opening.

"Mothers are all pretty fine! At least, the kind we used to get. And I guess the modern ones are made of the same old stuff underneath. I'm old-fashioned about mothers, Miss Mary. You may dislike me for it, but I want you to know the worst as well as the best of me. I may be only third from the bottom—"

"Marise, I want to speak to you," Hugh said in a low tone.

She glanced hesitatingly at the other two, but they were fencing joyously, and her murmured excuse, as she rose, was scarcely heeded. Hugh did not speak until they stood facing each other by the hearth in the drawing-room. Then he laid his hands on her shoulders.

"Who is this girl?"

Her smile was broken, blurred. "My daughter, Hughie."

He drew her up to him and kissed her as her father might have done. The tears in his eyes made her own overflow. When they spoke again, they were sitting together on the couch, her hand fast in his.

"Oh, you wonder!" he said with caught breath. "You never gave up—all these years—you kept on—and you have found her. My dear girl, my dear girl!"

She told him the story, briefly, leaving much to be filled in at some calmer time. He was not deeply concerned about the past; the miracle of the present held him amazed and exclaiming.

"Why, but she is splendid," he cried. "Think how I have croaked about what she would be—and here is this good and gallant child, with her straight eyes and her unsoiled spirit—she is of the people, but she isn't common! She's rare, Marise. And she is beautiful. What guardian angel did this for you?"

He had to stride about in his excitement, and Marise, watching him, felt a curious heaviness of spirit. He had not failed her in any way, he was moved to the very depths for her, ready to love and accept her child as she had never dreamed could be. She did not understand why she had been stricken so sad and forlorn.

"And she's clever," Hugh piled it up. "She has good clear brains. The way she sized up Engel! Oh, she can be anything, that girl. She's a power. With the chance you can give her—"

"She does not want to come to me," Marise interrupted. "That is why no one has been told. She prefers her adopted mother and her own way of life."

She offered it baldly, almost with hostility, and still she did not understand her own pain.

Hugh could not take the obstacle seriously. "That is rather fine of her," he said. "Oh, I like that. I like everything I see about her. You will win out in time; there is a good heart there as well as a good understanding. She doesn't look like you, and yet"—he paused, smiling to himself over old memories—"and yet she makes me think of you at eighteen," he concluded simply. "That joyous confidence in life—oh, yes, I can see you in her. Ah, she's a dear thing, Marise!"

Marise suddenly knew her trouble. This flame of rage—people called it "seeing red." In all her life she had never known so fiercely uncivilized a moment. It could not last, of course; generations of training instantly asserted their power. Jealous of her own child! It was worse than base—it was vulgar. She shook it off, bodily, lifting her head proudly against it, endorsing Hugh's words.

"Yes—a dear thing. I am a very fortunate woman."

Sharp recollection brought him to a standstill. "Oh—when did you say it happened? Last week? Of course, of course!" He drew the deep breath of the comforted, but did not explain.

"Don't show her that you know," Marise said quickly, as the two young people came in to say good night.

Hugh thought he hid his excitement, but he shone on Mary like a father. Mary, however, was used to being a success, and accepted his warm approval as her natural right. Her self-satisfaction was never offensive; she was charming in her bravery and candor. While Mr. Peavy did his manners with noble fluency, she stood by basking in the social brilliance of her admirer.

"Mrs. Jaffrey, it has been a privilege to meet you and be made welcome in your beautiful home." Mr. Peavy almost had tears in his little brown eyes that clung so tightly to hers. "I can't tell you how it is, but I am always falling on some delightful adventure. Last week I blew in at a house party up at Larchmont—a regular palace of a house; private yacht, everything—and they wouldn't let me get away. I'm lucky, that's what it is. Mr. Le Baron, I shall be happy to send you the clipping about the Forty-ninth Street Theater. I think you won't find anything you dislike in it. Well, Miss Mary, parting is sweet sorrow—"

Mary went with him, and they heard the front door close on his eloquence, and the girl's step mounting the stairs. When that had quite died away, they dared to exchange looks.

"My dear Marise," Hugh exclaimed, "where did you pick up that impossibly awful man?"

She laughed aloud, quite forgetting the little balcony just over her head and the curtained opening that gave light to the up-stairs hall. She had had so little occasion in her life to think of it, to care if she was overheard, that caution had never been impressed upon her. And it was a wicked relief to laugh. She had put down that hideous and unforgivable impulse of savagery, but it must have left its traces, for she was unkindly eager to laugh at Mary's friend.

"Oh, Hugh, wasn't he too dreadful!" she cried.

Even as she spoke the words, she felt guilty and ashamed. The sense of her disloyalty to the poor child spoiled the rest of Hugh's visit. He was deeply kind, still amazed and exalted for her, but, after he had gone, his joy seemed to her grievously impersonal and detached, the unselfish emotion of one who is merely an old friend. Certainly his kiss had said nothing else. It was not a happy night. When she arose in the morning, a need of mutely begging Mary's pardon sent her in her dressing-gown to Mary's door.

The room was empty. Mary must have made an early start. Marise asked Hannah about it when the latter brought her breakfast.

"What time did she go, Hannah?"

Hannah produced her news with prim satisfaction: "About an hour ago, m'am, without her breakfast and taking her bag." Her tone implied that she hoped this would be a lesson.

Marise set down the coffee pot, looking as shocked as heart could wish. "Her bag!"

"Yes, m'am, and all her things."

Marise half started up, then sank back again. Hannah had counted on a sensation, but not on this look of blind distress.

"The girl may have left a note," she conceded coldly. "She might at least have had the decency to do that. I will see."

There was a note, a folded slip of paper scrawled across by a wrathful pencil. It had neither address nor signature:

"If my friends are not good enough for you, then I'm not. This settles it."

Marise, reading and rereading the flying lines, remembered her uneasy conscience when she and Hugh had laughed together over the impossibly awful Mr. Peavy, and saw what had happened. The desolate, "*Oh!*" of her understanding was more than Hanah could bear.

"I tell you truly, m'am" she began, tense hands folded across her apron, "the girl was not worthy of your trouble. You could never have made a lady of her, or a fit companion—"

"Hannah, Hannah!" The cry smote Hannah silent, giving her a premonition of the crushing truth before it fell. "Why, that is Mary, that is my own baby, found and lost'—her voice trembled and fell—"found and lost. And it is all my own fault. I found her, and now she is lost."

Hannah had turned a congested red. Her helpless little rabbit mouth gasped feebly once or twice, then she flung up her hands and ran from the room. Marise had no heart then to wonder about her. All she could see was her own gigantic failure.

"We never learn," was her bitter conclusion. "We die what we were born. I have spent half my life learning to love my fellow men, and at the first real test I went right back to the thing I was born. To class feeling and shrinking and ridicule. I called the poor little man dreadful and I laughed—that is just what I should have done twenty years ago. And I have lost Mary by it—hopelessly; I could have struck her in the face and done less harm. I love her, but love of fellow men—do I really know what it means?" She had been identifying that love with the service of the past years; she had proved them one to Hugh, but now they seemed poles apart. "I have been sorry, and I have worked and given; but that is nothing, nothing. I haven't loved. To spend all one's life on a lesson, and then not know the rudiments! Ah, I can't go on. I give up."

(To be continued)

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Our illustrated catalog tells how to take off and care for hides; how and when we pay the freight both ways; about our safe drying process on cow and horse hide, calf and other skins; about the fur goods and game trophies we sell, taxidermy, etc.

Then we have recently got out another catalog called Fashion Book, wholly devoted to fashion plates of muffs, neckwear and other fine fur garments, with tanning and making charges. Also fur garments remodeled and repaired.

For Fox, Raccoon and smaller skins, the Fashion Book is all you need. Catalog is for big stuff.

You can have either book by sending your correct address naming which, or both books if you need both. Address

The Crosby Frisian Fur Company,
571 Lyell Ave., Rochester, N. Y

We Always Pay Highest Market Prices for all Raw Furs

Ask for Free Price List.

L. RABINOWITZ,
115-121 West 29th Street, New York City

Work the Cure for the World's Hurt

Speaking to members of the Omaha, Neb., Commercial Club the other day, Mr. George M. Wilber, a prominent Ohio farmer, while discussing the subject, "Omaha: It's Relation to Agriculture and Live Stock," gave as his prescription for curing the world's hurt, good old-fashioned work. Because Mr. Wilber is a possible candidate for Secretary of Agriculture in President-elect Harding's cabinet, his words will be read with interest by all.

"Let us all get to work," he said. Then proceeding he declared that the problems of the North are the problems of the South. The same conditions are confronting both regions. Wheat strikes will not cure anything. Burning of cotton and cotton gins will only make bad matters worse. According to Mr. Wilber, such acts are like cutting off the dog's head to cure the mange. Insisting that sound thinking must be done and that it is time for strict attention to fundamentals, the Ohio man of varied agricultural experience called for a national policy that is broad enough and sound enough to cover the entire national proposition, to benefit others than farmers in like proportion and to bring harm to no one.

"I do not believe," continued Mr. Wilber as he touched upon the subject of organization, "that farmers, stockmen or dairymen will band themselves willingly into anything that savors of a labor union. They do not care to surrender all liberty of voluntary action to a leader who is often self-constituted. Nor will these same men be parties to anything that savors of a trust.

"There remain, however, organizations akin to those of business men everywhere; commercial clubs, chambers of commerce, credit bureaus, clearing houses and others, where individuals secure the benefit of co-ordinated efforts at a fraction of the expense that they could secure the service individually. Men engaged in agriculture and allied interests should see their needs in a business fashion, know costs and know markets."

Arrangement for European credits, a truthpin-fabric law and restoration of the old-time protective tariff are three acts that Mr. Wilber would have the United States Congress pass just as soon as possible. He recited the European need for raw materials, declaring it to be a crime that shoddy can be palmed off as "all wool" and proclaimed for the protection of American investment in capital and labor against the cheap land and cheap labor across both oceans.

"The American farmer," said Mr. Wilber, after declaring that the tiller of the soil is now simply doing the best he can, "is between the upper and nether millstones; the upper one of high-priced commodities and the nether one of almost valueless farm products with several of them unsalable at any price. Thousands and thousands of renters, as well as landlords, are without funds."

Exclaiming that Americans are not going to quit, the Ohio man brought cheers from his auditors when he asserted, "We are going to up-and-at it. T is country will be in good shape again one of these days. We farmers are willing to do our part, but bankers, in connection with the government, must assist us to finance ourselves better so that we will not be compelled to sacrifice our cattle, corn and wheat as we are now doing. Agriculture is not only the salvation of Omaha, but of this nation, and any assistance rendered agriculture will be reflected back to you many fold. I have abiding faith in the future of this country. We had a meeting recently of the stockholders of the nation and, unless I mistake not, the officers elected will remedy some things which have had to do with our present conditions."

How to Use Crimson Clover

A large part of the value of Crimson clover lies in the ability which it shares with other clovers, to utilize the nitrogen of the air and add it to the soil, say specialists of the United States Department of Agriculture. When encouraged to do this, Crimson clover is a valuable soil improver. If it is planted on rich land it will utilize the nitrogen already present in the soil and is not stimulated to contribute anything to its own support or to the support of other crops.

Crimson clover is a winter annual plant of the true clover group. It is also known as Scarlet clover, French clover, Italian clover and German clover. It is the only annual true clover that is of more than incidental agricultural importance in the eastern United States. It owes its place in the crop rotation of the Atlantic Coastal Plain to the fact that it can be planted when the land is not occupied by ordinary summer crops. Usually it is sown following a grain crop, or in an intertilled crop in late summer, and is ready to harvest for hay, to pasture, or to turn under as a green manure crop in the spring. South of central Delaware it may even be cut for seed and the stubble plowed under in time for seeding a quick-maturing strain of corn. Grown in the off season of the year, Crimson clover is one of the most economical legumes that can be produced for green manure, and it has been largely used for that in the regions to which it is adapted.

The many ways by which this crop may be utilized are discussed by plant specialists of the United States Department of Agriculture in Farmers' Bulletin 1142, "Growing Crimson Clover."

Though it was brought from Europe to this country in 1818, its value as a forage plant was not recognized until about 1880. The plant does not withstand either extreme heat or cold, and is best adapted to a soil that is not very rich and to a climate where the winters are not severe. Ordinarily it can not survive the winter in latitudes north of southern Pennsylvania, while in some of the Southern states it is frequently killed by dry, hot weather in the fall or spring.

Its growth is comparable to that of winter wheat. Planted in the fall, it lies more or less dormant throughout the winter and completes its growth in the spring. If the summers are not too hot it can sometimes be planted in the spring and grown as a summer crop, but for this purpose other clovers are usually preferred. Corn in the summer, with Crimson clover in the winter is a cheap and convenient method of growing a cash crop and a soil-improving crop in the same year. The reputation of Crimson clover as a crop increaser is largely based on this simple rotation. Instances are by no means rare where the yield of corn has been gradually increased from 10 bushels to as high as 70 bushels to the acre by this means. The difficulty which this method presents is the possibility of failure of the young clover through drought. The growing corn makes a heavy demand on the soil moisture, and if there is not enough water for both clover and corn the latter gets the larger share and the clover plants are likely to succumb.

Crimson clover may be seeded in practically any of the cultivated crops, which receive their last cultivation from eight to twelve weeks before the first frost. It is not wise to seed clover in late potatoes, sweet potatoes, or other root crops, as the digging in the fall practically destroys the clover. Neither does it do well when sown into cowpeas, sorghum or watermelons, owing to the heavy shade cast by those crops. The most common cause of failure to obtain a stand of Crimson clover is a period of hot, dry weather occurring after planting.

The roots of Crimson clover are inoculated by the same strain of bacteria which occurs on the roots of all true clovers; consequently a field which has produced a good stand of Red, Mammoth, Alsike, White, Hop, Carolina, Rabbit's Foot, or Buffalo clover is usually sufficiently inoculated for Crimson clover. A test planting yielded 4,057 pounds of Crimson clover hay on one inoculated plat and 6100 pounds on another. On two corresponding areas which were not inoculated the first plat yielded 761 pounds and there was nothing on the other. Methods of inoculation, seeding, the choice of seed, and the treatment of the stand are fully described in the bulletin, which may be had upon request of the United States Dept. of Agriculture, Washington, D. C.

Storing Seed Potatoes

Most of the potato growers of this section grow their own seed, and those who buy new seed each year usually do so in the fall. For these reasons the storage problem is very important. Good seed potatoes are often very much weakened in their vitality by storing them under improper conditions. These conditions are temperature, moisture and ventilation, say specialists at the Pennsylvania State College School of Agriculture.

Experiments show that potatoes keep best when stored at a temperature ranging between 35 and 40 degrees Fahrenheit. The moisture present in the air should be sufficient to prevent wilting, but not such as to allow condensation on the tubers. The ventilation should be sufficient to allow a frequent change of the air throughout the pile.

These conditions may be met in "pits" dug in the ground, in bins built in cellars, or in especially constructed storage houses. In no case should the potatoes be piled to a depth of over three feet, for the reason that deep piles prevent proper ventilation.

If pits are used it is important that they be protected from freezing and that they be provided with a stack for ventilation. The stack should extend as far down as the center of the pile. If cellars are used the potatoes keep best when placed in racks or small bins with ventilation between them. Cellars equipped with furnaces are not usually favorable for storage of potatoes unless the storage part is well isolated from the furnace room. The temperatures are usually too high and the air too dry. Windows allow for ventilation if regulated according to the outside conditions. Careful attention to these details will prevent much of the loss from rot and bring the tubers through the winter in good condition for seed purposes.

The Hay and Grain Show

A miniature farm, the reproduction of an 80-acre tract, was one of the most impressive exhibits at the International Hay and Grain Show at Chicago, November 27 to December 4. It was a composite example of good and bad farming and attracted the attention of thousands of visitors. The 80 acres of poorly farmed land were taken over and subjected to scientific farming methods. The increased productivity of the tract made the farmers from all parts of the country stare in wonder. It was one of the most impressive lessons of the show, the most comprehensive grain and hay show ever held.

It is stated that never before were so many prize samples of grain, hay and seeds brought together. The $10,000 cash premiums offered by the Chicago Board of Trade to encourage general crop improvement sharpened competition. Canada sent its best, as did the central western states, the northwest, the southwest and the far west.

The show was, in effect, a short course in crop improvement and live stock raising. Charts developed from years of close scientific study showed precisely the proper feeding of hogs. They showed, too, why a supply of good protein feed with corn in the ration reduces the time of fattening hogs, requires less feed and produces a more healthy condition.

Other charts scattered over the acres of pavilion devoted to the show taught an impressive lesson in the art of soil treatment and in the values of crop rotation.

"Most successful show of its kind ever held," said Prof. G. I. Christie, of Purdue University, in charge of the exhibit. "It will go far toward crop improvement—one of the aims of the Board of Trade. It has brought together the composite ideas of the best farmers of America and Canada."

Similar views were expressed by many other agricultural leaders.

The United States Department of Agriculture, state colleges of agriculture, as well as various grain, hay and seed associations, had extensive exhibits at the show, which was an outstanding feature of the International Live Stock Exposition.

Try Curing Pork This Way

Instead of using nothing but salt in your pork curing this winter, try mixing a little sugar and saltpetre with the salt and see whether your hams and bacon will not taste better. The saltpetre causes the meat to hold its color, while the sugar prevents it from becoming hard and dry. For 100 pounds of meat, use twelve pounds of salt, 2 pounds of brown sugar and two ounces of saltpetre.

The Prosperous Cow

(Concluded from page 358)

clover at last working of any of these crops, or rye after harvesting the crop, manuring again on frozen ground and plowing the clover or rye down for corn the following spring, is pretty good crop insurance, gives plenty of feed and keeps the land busy.

Sugar corn as a valuable catch crop for feeding is probably not fully appreciated by farmers—the cows will show no lack of appreciation, however. Of course, if the roasting ears can be gathered and sold and return more money than they are worth for feed, it is obviously extravagant to feed them. Better sell them and buy needed feeds with part of the money. It is so, also, with all extra crops; for example, soy beans are admittedly a valuable feed crop, but if one does not have land and time to grow both beans and, say, potatoes, and the money value of the potato crop is two, three or more times that of the beans, certainly one will grow potatoes and buy gluten, or oil meal or the like with part of the potato money and liberty bonds with the balance.

Personally, I like putting plenty of stuff into the silo, which provides the most economical storage available to the farmer, and later from its contents furnishes a perfectly wholesome, uniform and productive ration base. Crops planted for soiling purposes can be harvested more cheaply by being cut and ensiloed at once when at their best, than when cut and hauled every day or so, too green at the start and too ripe at the finish for best feeding results. In handling my oats crop I stack that portion intended for the cows near the silo, and when ready to cut corn into silo, cut the oat sheaves, straw and grain, in with the corn, mixing well in the silo. This saves the expense of threshing and grinding the oats, helps balance the ration, uses the oats straw productively and lessens my feed bill—along which lines the farmer must be alert.

While working and waiting for organization and "readjustment" to bring their tardy results, let us maintain our initiative by efficient lowering of the cost of economical production—our surest hope of maximum returns.

Pennsylvania.

For the Man With a Silo

Mixtures of soy beans and corn, and sunflowers and corn for silage have been tried with success at the Pennsylvania State College School of Agriculture, and experiments with both will be carried further during the coming winter. Last year very satisfactory results were obtained through feeding these combinations, so much in fact, that the experimental silos at the college dairy barns have been filled with a supply that will last through another substantial feed period.

One silo has been filled with soy beans. Much interest has been manifested throughout Pennsylvania in the feeding value of this combination. Soy beans as hay have been steadily increasing in favor in certain sections of the state in the past few years, and there is general interest shown in its possibilities as an ensilage crop combined with corn. It makes a palatable and nutritious feed, and the only drawback thus far is the difficulty met by many farmers in planting and fertilizing both crops at the same time.

Experiments with the sunflower and corn silage, composed of equal parts of each plant, are being conducted by the college for the special benefit of the northern tier farmers where the seasons are short and it is difficult to ripen corn. It is claimed that the sunflowers will grow more tons per acre, will thrive on poorer ground and will stand frost better than corn.

Profit in Quickly Matured Pigs

That it is usually advisable to feed fall pigs heavily and fatten them as quickly as possible rather than feed a light ration through the winter is brought out in tests at the Ohio Experiment Station.

Farmers sometimes carry their pigs through the winter on as little grain as possible and then in spring turn them on pasture with the intention of compelling them to make their gains largely from forage.

According to the experiment, the profit from light winter feeding, with forage and grain during the spring months, is not large enough to justify the expense of keeping the corn and feeding hogs over the long period.

Considerable more labor is required, and the overhead charges increase for the longer period, so that more profit must be secured to pay for these extra expenses.

With the cost of corn figured at $1.12 a bushel, tankage at $100 a ton and pasture at $12 an acre, the returns per bushel of corn were only 6 cents greater with light feeding followed by forage than that shown by full-fed pigs.

Philadelphia Milk Prices

The Interstate Milk Producers' Association announces that the price for milk in Philadelphia will range from $3.28 per hundred pounds, or 7.1 cents per quart for milk testing 3 per cent., to $4.08 per hundred, or 8.9 cents per quart for milk which tests 5 per cent., beginning Dec. 1, 1920, subject to change whenever warranted by market conditions. When milk is not tested the price f. o. b. Philadelphia, is to be 8 cents per quart.

From these prices one cent per 46 quarts (or one cent per 100 pounds) is to be deducted by the buyer, which together with one cent per 46 quarts, contributed by the buyer, is to be turned over to the treasurer of the Advertising Campaign Committee for the purpose of carrying on a publicity campaign advertising the food value and greater consumption of dairy products. The usual commission from the members of the Interstate Milk Producers' Association is to be deducted and returned to the Association as heretofore.

So Says Uncle Sam

Through final action of Governor Goodrich, the Indiana "Blue Sky law" has become effective in that state. The law regulates the sale of stocks and securities and offers added protection to investors from the allurements of spurious stocks sold and advertised by unscrupulous promoters.

Similar action is pending in a dozen other states throughout the country and never was such protection more urgently needed. In discussing recently the financial situation as it affects the farmer, J. W. Shorthill, former secretary of the Nebraska Farmers' Cooperative Grain and Live Stock Association, declared that more than $100,000,000 was spent in Nebraska alone in the last year "on worthless stocks and other foolish ventures that we choose to call investments."

In connection with the credit situation Mr. Shorthill said: "We have already had too much credit rather than too little. There has been so much credit in Nebraska that foolish ventures were made when we should have known better."

In Los Angeles Alone, it is estimated by a middle west paper, that confidence men obtained over $3,000,000 from tourists and homeseekers from other parts of the country by fake schemes which range from charging $7.50 for a "permit" to enter the city, to investments of $50,000 in fake oil stocks.

Blue sky laws undoubtedly will afford some needed protection, but prevention in finance as in disease, is better than cure. The safest protection against the dishonest promoter is regular investment in sound and safe securities, and Uncle Sam says War Saving Stamps are safest of all.

What's Your Wood Lot Worth Today?

F. A. S.

When reading a report on wood values recently, the thought occurred to the writer, "I wonder if the farmer or owner of a woodlot has ever seriously considered the value of his fuel wood?"

The following table taken from a recent report is very enlightening on this subject:

Kind of wood	Weight per cord—Lbs.		Per cent. heat value of one cord of wood as compared to one ton of hard coal.	
	Air dry	Green	Air dry	Green
Basswood	2300	3700	48	42
Paper Birch	3400	4600	70	64
Yellow Birch	4000	5200	80	75
Elm	3100	4400	68	61
Hackberry	3500	4400	73	68
Soft Maple	3100	4100	69	63
Sugar Maple	3900	5000	84	78
Bur Oak	4000	5500	87	80
Red Oak	4100	5800	83	75
White Oak	4300	5600	92	86
Jack Pine	2700	4500	60	52
Popple	2400	4200	54	47
Tamarack	3400	4200	72	70

It would appear then that a man with the aid of a sawing machine holds the key to his own fuel question, and, outside of the question of providing fuel for home use, farm folks who have woodlots have a chance to cash in on the present high price paid for cord wood.

Has your wife's kitchen kept pace with the general modernization and improvement that has gone on on your farm the last few years? Hasn't she earned every modern convenience that you can supply for her in the kitchen and elsewhere in the home?

Oh, yes, one still meets an occasional Rip Van Winkle who believes that apples are best left as nature made them without the interference of man. You'll notice, though, that his fruit, if it ever gets to market, doesn't answer the roll call of the "A's" and "B's."

Why So Widely Used?

There is only one reason why Kow-Kare (formerly called Kow-Kure) is so generally used by dairymen all over the country.

Merit, proven time after time, in treating the ills of milking cows is the one answer.

By assisting the digestive and genital organs to function normally Kow-Kare throws off diseases and is a reliable treatment for Barrenness, Abortion, Retained Afterbirth, Scouring, Lost Appetite, Bunches.

Buy Kow-Kare in 70c and $1.40 packages from feed dealers, general stores or druggists.

DAIRY ASSOCIATION CO.
Lyndonville, Vt.

Balance Your Home Grown Feed with

STRUVEN'S FISH MEAL

You are feeding more home grown grain now than in any previous December. Home grown grains, especially corn, absolutely require a protein concentrate to make them a good feed.
Every experiment station and every big breeder has proven this.
That's why you must have Struven's Fish Meal this month.
Go to your dealer. If he doesn't carry it, write us his name and we'll see that you get it. Write now while you think about it.

CHAS. M. STRUVEN & CO.,
114 Frederick St., Baltimore, Md.

REG. P. CHINAS, BERKSHIRES, C. WHITES, Large strains, all ages, mated not akin. Bred Sows, Service Boars, Lincoln Service Bucks, Grade Guernsey and Holstein Calves. Collies and Beagle Pups. *Send stamp for prices and Circulars.*
P. F. HAMILTON, Cochranville, Pa.

ROSECOYD FARM'S
Duroes of Quality. Well kept, well bred, well fed.
D. M. STOUDT, Hershey, Pa.

FOR SALE. Big Type Poland China Hogs. Service Boars ready for quick delivery, and gilts same age. Also fall pigs either sex or in pairs, no akin. Everything cholera immuned. Prices reasonable, quality and breeding considered. H. H. DAVIS, Mt. Victory, O. R.F.D., No. 1.

Make Yourself a Christmas Gift of a pair of my Berkshires and be merry ever after. Will take Liberty Bond at par. W. F. MCSPARRAN, FURNISS, PA.

I WILL prescribe, furnishing medicine, for any abnormality known to Veterinary Science, for the sum of $1.50. Write, stating symptoms as you see them. DR. CROSBY KELLY, Veterinarian 1151 New Jersey Avenue, N. W., Washington, D. C.

Selling Corn or Feeding it?

Shall we sell our corn outright or turn it into beef? The U. S. Department of Agriculture gives out some figures which may throw light on the question.

In Missouri, where the investigations were carried on in co-operation with the University of Missouri, most of the cattle covered in the surveys arrived at market having cost the farmer between $11 and $16 per hundred, with average costs as follows:

Winter 1918-19, all cattle (3475 head), $13.78; winter 1919-20, cattle covered by survey records (3415), $13.90, by cost accounting records (2076 head), $13.83.

In the Missouri area, figuring on the basis of the average steer, and counting corn at the farm price current when it was fed, there was a presumptive loss of $4.54 per head for cattle covered in the first winter of the study, and of $20.95 and $23.70 per head, respectively, for the two groups covered during the second winter.

In Iowa, where the studies were conducted by Iowa State College, with the United States Department of Agriculture co-operating, most of the cattle studied in the winter of 1918-19 cost between $13 and $18 per hundred, laid down at market, while most of these covered in 1919-20 cost between $11 and $16 per hundred. Averages were as follows: Winter 1918-19, all cattle (3996 head), $15.32; winter 1919-20, cattle covered by survey (3165 head), $13.52, by cost accounting method (1129 head), $14.41.

Figuring on the basis of the average steers, and counting corn at its farm price, there was a presumptive average loss of $9.43 per head for the cattle covered during the first winter of the study, and of $10.03 and $9.33, respectively, for the two groups covered during the second winter.

In the Indiana area, where the study was conducted by Purdue University, with the co-operation of the United States Department of Agriculture, most of the cattle studied cost the farmers between $12 and $17 per hundred laid down at market. Costs were practically the same for 1918-19 and for 1919-20. Averages were as follows: First winter, all cattle (1540), $14.44 per hundred: second winter, cattle covered by survey (2199 head), $14.57, by cost accounting method (817 head), $14.79.

In the Indiana area, figuring on the basis of the average steer, with corn counted at the farm price, there was a presumptive average loss of $4.53 per head for the cattle covered in 1918-19, and of $19.33 and $27.11, respectively, for the two groups covered during the second winter.

Figuring without reference to the market price of corn, that is, counting actual amount received for corn fed, it was found that more than half the farmers concerned realized less than $1 per bushel by marketing their corn through cattle, and that a considerable percentage of the cattle did not return anything for the corn fed to them.

How does your household budget compare with this—25 per cent. food, 20 per cent. for rent, or its equivalent, 15 per cent. for operating expenses (fuel, water, repairs, etc.), 20 per cent. for clothing and 20 per cent. for higher life, including all that goes toward education, culture, health, recreation, etc.?

For starting the fire in a hurry or speeding up a late breakfast, dry corn cobs can't be "beat."

"Scratch and lay well," says the high-egg hen as she starts energetically through the shavings hunting for grain.

State College Agricultural Library

A Year in the Open

DURING the year just closing HEBE and its relation to the dairy industry has been brought to the forefront of dairying thought and has been made the subject of considerable discussion. This has resulted largely from the campaign of educational advertising which the Hebe Company has been conducting in this and other farm journals. This out-in-the-open discussion has demonstrated that the opposition to HEBE has been inspired largely either by prejudice, misrepresentation of the facts or misunderstanding of the nature and purposes of HEBE and the manner in which it is being advertised and marketed.

During this discussion many questions have been asked and answered and many charges reflecting against the product have been aired and refuted.

Although presented in a variety of forms the charges against HEBE, when reduced to fundamentals resolved themselves into these two points:—

1. The belief that HEBE will injure the dairy industry by being marketed as a substitute for evaporated and condensed whole milk.
2. The belief that in HEBE skimmed milk is used simply as a means of bringing cocoanut fat on the market in competition with butter fat.

In the advertising published in farm journals and in the correspondence resulting from this form of advertising these points have been answered frankly and fairly. In answer to the first it has been shown that:—

HEBE is *not* being advertised or marketed either as evaporated or condensed whole milk or as a substitute for it or a substitute for anything else—but that HEBE is produced, labeled, advertised and marketed as a new and distinctive product (a compound of evaporated skimmed milk and vegetable fat) for definite uses (cooking, baking, coffee) and as such is building its own market and thus increasing the general consumption of dairy products.

In answer to the second point it has been shown that:—

HEBE is *not* being used as a means of bringing cocoanut fat to the market but that the converse of this is true—that a small amount of cocoanut fat is merely the vehicle by which a large amount of skimmed milk is being brought to the market as a cooking medium. In the production of every hundred pounds of HEBE, two hundred and ten pounds of skimmed milk and only seven and eight-tenths pounds of cocoanut fat are used. This small amount of non-dairy ingredient is there merely to supply the large amount of dairy ingredient with the shortening and other elements necessary to make it desirable as a cooking medium. The cocoanut fat in HEBE serves a purpose similar to the purposes served by salt in butter and gelatine and flavoring extracts in ice cream—to make the dairy ingredient more readily salable for the uses intended.

As can be seen in this brief review of the year's development in the HEBE discussion the Hebe Company has diligently sought to give to the rank and file of the dairy industry all of the facts by which they may judge the product and know how it will affect their business. It has always been the belief of this Company that the dairymen should have these facts and that it is for the best interest of the dairy industry as well as the Hebe Company to give the broadest publicity to all matters that directly affect the industry.

It is only partial knowledge that is dangerous and that is why many dairymen and leaders of dairy thought, after learning all of the facts, have come to see HEBE in a different light in its relation to the dairy industry.

The HEBE situation is discussed at length in the booklet "The Missing Third"—a copy of which will be sent free on request to the Hebe Company, 3259 Consumers Bldg., Chicago.

THE HEBE COMPANY

CHICAGO SEATTLE

End of Volume